

KAMARIN

Mounting base for telephone apparatus. Slaboproudny obzor 24  
no.5;315 My '63.

KAMARISHKI, I.

"Ten Damages Occurring Most Frequently In Radio Sets."

p. 40 (Radio i Televiziia, Vol. 7, No. 6, 1958, Sofia, Bulgaria)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 11,  
Nov. 1958

L 18194-63 EWP(j)/EPF(c)/EWT(m)/BDS ASD Fe-l/Pr-l RM/WW  
ACCESSION NR: AP3005898 S/0153/63/006/003/0465/0470

68

67

AUTHORS: Pavlenko, T. G.; Andrianov, K. A.; L'vov, S. V.; Khananishvili, L. M.;  
Serafimov, I. A.; Kamaritskiy, B. A.

TITLE: Hydrolysis of organochlorsilanes in continuous-motion counterflow spray columns

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 6, no. 3, 1963, 465-470

TOPIC TAGS: methylchlorsilane, dimethylchlorsilane, phenyltrichlorsilane,  
plastics, counterflow spray column, continuous-motion spray column,  
hydrolysis

ABSTRACT: The process and apparatus described were used for the hydrolysis of methyltrichlorsilane and dimethylchlorsilane, and the co-hydrolysis of methyltrichlorsilane and phenyltrichlorsilane. The polymer obtained from methyltrichlorsilane was not inferior to that obtained with the periodic method in mixed-type apparatus: gel time, 12 min; setting time, 20 min; viscosity in toluene solution, 10.5 sec; dry residue, 24.5%. A plastic prepared from this polymer had good physico-mechanical properties, in excess of technical requirements except for bending strength. Orig. art. has: 2 figures, 5 tables.

1/2 ASN: Moscow Institute Of Fine Chemical Technology.

Card

KAMARLI, A. P.

KAMARLI, A. P. --"Influence of Ox Warble Fly Invasion on the Organisms of Large Horned Cattle and the Search for Effective Periods of Treatment against the Ox Warble Fly." \*(Dissertations For Degrees In Science And Engineering Defended At USSR, Higher Educational Institutions). (34). All-Union Inst of Experimental Veterinary Science of the Min Agriculture USSR, Moscow, 1955

SO: Knizhnaya Letopis' No. 34, 20 August 1955

\* For the Degree of Candidate in Veterinary Sciences

KAMARLI I.P.

USSR/Diseases of Farm Animals. Diseases Caused by Bacteria and Fungi R-1

Abs Jour : Ref Zhur - Biol., No 7, 1958, No 31081

Author : Troitskiy I.A., <sup>proj.</sup> Kamari <sup>aspirant</sup> I.P.  
Inst : All-Union Scientific Research Institute of Veterinary  
Hygiene and Ectoparasitology  
Title : Morphological Changes of the Blood in Foot Rot of Sheep

Orig Pub : Tr. Vses. n.-i. in-ta, vet. sanitarii i ektoparazitol.,  
1957, 11, 271-275

Abstract : Studies were conducted under laboratory conditions at an experimental farm on clinically healthy and on diseased sheep. In the white blood of the sick sheep, the following insignificant changes were observed: a certain amount of leukocytosis, an increase of monocytes, and the appearance of young forms in the blood. No changes in the red blood or in the erythrocyte sedimentation reaction were observed.--  
I.Ya. Panchenko.

Card : 1/1

"APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000620220014-4

KAMARLI, A. P. and FILATOV, I. P.

"Hypodermic gadfly in goats."

Veterinariya Vol. 37, No. 3, 1960, p. 65

Kamarli, A.P. - Cand.Vet.Sci - Turguz Sci Res Animal and Vet. Inst.

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000620220014-4"

KAMARLI, A. P. (Candidate of Veterinary Sciences, Kirgiz Scientific Research Institute of Animal Husbandry and Veterinary Medicine)

"Utilization of chbrophos in subcutaneous gadfly invasion of cattle"

Veterinariya, vol. 39, no. 7, July 1962 pp. 80

KAMARLI, A.P., kand.veter. nauk; FILATOV, I.P.

Warble flies of goats. Veterinariia 37 no.3:65 Mr '60.

(MIRA 16:6)

1. Kirgizskiy nauchno-issledovatel'skiy institut zhivotnovodstva  
i veterinarii (for Kamarli). 2. Direktor Uch-Korgonskoy veteri-  
narno-bakteriologicheskoy laboratorii (for Filatov).

(Warble flies)

KAMARLI, A.P., kand. veterin. nauk

Use of chlorophos against warble fly infestation of cattle. Veterinariia  
39 no.7:80 Jl '62. (MIRA 18:1)

1. Kirgizskiy nauchno-issledovatel'skiy institut zhivotnovodstva i  
veterinarii.

RAMARIF, A.P., kand. veterin. nauk

Measures for controlling the sheep botfly. Veterinariia 41 no.2:  
46-47 F '65. (MIRA 18:3)

1. Kirgizskiy nauchno-issledovatel'skiy institut zhivotnovodstva  
i veterinarii.

KAMHANITKAYA, A. M.

M

Country : USSR  
Category: Cultivated Plants. Fruit. Berries.

Abs Jour: "Mol.", No 11, 1958, No 49116

Author : Makhnitskaya, A.M.

Inst : AS Ukrainian SSR

Title : Effect of the Conditions of Germination and Hybridization on the Formation of Resistant and High-Quality Peach Seedlings.

Orig Pub: Tr. Botan. sada AN USSR, 1957, 4, 108-113

Abstract: Some results of many-years experiments on altering the nature of peach are reported. These experiments were started by Kashchenko on a plot artificially created by him in the Acclimatization garden of the Botanical Garden of the Academy of Sciences of the Ukrainian Soviet Socialist Republic. The plot is a

Card : 1/3

M-162

KAMARNITSKIY, M.A., inzhener

Semiautomatic multi-center milling machine. Vest mash. 35 no.4:  
65-67 Ap '55. (MIRA 8:6)  
(Milling machines)

R/Soil Science - Physical and Chemical Properties of Soil

J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1372

Author : Kamarov, B.N.

Inst : AS USSR

Title : Change in Soil Respiration and Carbon Dioxide Content  
in Surface Layer of Air in Twenty-Four Hours

Orig Pub : Dokl. AN SSSR, 1958, 118, No 2, 389-291

Abstract : In turf-podzolic and drained peat-bog soils in daytime  
hours 1.5 - 2.0 times more carbon dioxide gas was libe-  
rated than during the nighttime. The CO<sub>2</sub> content in the  
surface layer of air (25 - 40 cm from upper soil) was  
sharply decreased with a minimum in 12 hours, and after  
18 hours it rose noticeable. Observations were conduc-  
ted in Bronnitskiy and Dmitrovskiy Rayons, Moskovskaya  
Oblast'. -- G.N. Nesterova

Card 1/1

- 25 -

KAMAROV, V.A.; CHERNIKOVA, Ye.A.; DROZDOVA, V.M.

Determination of the surface and porosity of solids by means of  
low-temperature adsorption of gases. Uch.zap.Len.un. no.131:  
53-78 '49. (Adsorbents) (MIRA 9:6)

KAMAROVA, L.I.

Conference of the production of ferment preparations.  
Mikrobiologija 24 no.5:646-648 S-O '55. (MLRA 9:1)  
(FERMENTATION)

KAMARKOVA, Ye. S.

M

USSR/Cultivated Plants - Fruits. Berries.

Abs Jour : Ref Zhur Biol., No 12, 1958, 53845

Author : Khamarkova, Ye.S.

Inst : -  
Title : Georgian Grape Varieties Which are Promising for Ukraine

Orig Pub : Vinodeliye i vinogradarstvo SSSR, 1957, No 4, 28-34

Abstract : All Georgian varieties in Ukraine are distinguished by good maturing of the shoots, by a comparative resistance to mildew and rot, and by a strong affinity with the stocks of Riparia x Rupestris. They are also distinguished by high fruit bearing capacity and by a long retention of the acidity of the berries along with their saccharinity. At the same time the majority of the varieties proved to be sensitive to drought. Even in the south of Ukraine, the varieties from lower Imeretiya (Saperavi, Rkatsitseli) do not mature every year. Chinuri, Alexandreuli, Khikhvi and Goruli mtsvane are particularly

Card 1/2

Card 2/2

APPROVED FOR RELEASE: 08/10/2001 <sup>146</sup> CIA-RDP86-00513R000620220014-4"

CZECHOSLOVAKIA

MACKU, M.; KAMARYT, J.; NOVAKOVA, J.; Department of Infectious Diseases, at the Hospital of the Faculty of Pediatrics (Infekcni Odd. Fak. Detske Nemocnice), Brno, Head (Vedouci) Docent Dr V. KLUSKA: Biochemical Department Research Institute of Pediatrics (Biochemicko-vyzkumneho Ustavu Pediatrickeho), Brno, Head (Vedouci) Dr V. HRSTKA.

"Activity of LDH Isoenzymes in the Cerebrospinal Fluid in Various Types of Neuroinfections."

Prague, Ceskoslovenska Neurologie, Vol 29, No 4, Jul 66, pp 269-275

Abstract /Authors' English summary modified: Activity of LDH iso-enzymes in the cerebrospinal fluid of 50 patients with various affections of the CNS was investigated. The activity appears to be a function of the number of cells found in the fluid. 4 distinct types of zymograms of LDH were found in the fluid. In cell-free fluid the activity was undifferentiated; patients with parotitis, meningoencephalitis had activity of all 5 types of LDH isoenzymes; patients with purulent meningitis had the greatest activity in the 5th fraction of LDH. Some patients had maximum activity in the 1st fraction which is typical for erythrocytes. 8 Figures, 4 Western, 3 Czech references. (Ms. rec. 15 Jan 66).

ULRICH, J.; KAMARYT, J.; ZAZVORKA, Z.

The importance of the evaluation of isoenzymes of lactate dehydrogenase in ischemic diseases of the heart. Cor vasa 7 no.4:294-300 '65.

1. Département pour les maladies internes et laboratoires centraux de l'OUNZ, Most, CSSR.

CZECHOSLOVAKIA

KAMARYT, J., and ZAZVORKA, Zdenek, MD, of the Central Laboratories (Ustredni laboratoare), OUNZ [Okresni ustav narodniho zdravi; Okres Institute of Public Health], Most, Zdenek ZAZVORKA, MD, director.

"Experience with the Enzymatic Estimation of the Ethanol Blood Level"

Prague, Casopis Lekaru Ceskych, Vol CII, No 17, 26 April 63, pp 460-464.

Abstract [Authors' English summary, modified]: The method described is faster and simpler than Widmark's method. It is highly specific and rules out possible errors occurring as a result of the nonspecificity of Widmark's method. The latter may prove useful for the differential diagnosis of obscure intoxications, loss of consciousness, and comatose conditions when a physician wants an immediate clinical diagnosis. Discussed is also a possibility of applying the reverse course of the reaction for estimating ethanol following a transformation of ethanol into acetaldehyde through oxidation. Sixteen references, including 6 Czech and 1 Slovak.

p.1

KAMARYT, J.; ZAZVORKA, Z.

Isozymes of lactate dehydrogenase. I. Methods of determination. Cas. lek. cesk. 103 no.14:373-378 3 Ap'64.

1. Ustredni laboratoare OUNZ v Moste; vedouci: MUDr. Z.Zazvorka

\*

ZAZVORKA, Z.; KAMARYT, J.

Isoenzymes of lactate dehydrogenase. II. Principles for clinical  
biochemical values. Cas. lek. cesk. 103 no.21:572-576  
22 My'64.

1. Ustredni laboratoare OUNZ v Moste; bedouci: MUDr. Z.Zazvorka.

KAMARYT, Josef, inz.

Results of the controlling measurement of building structure  
assembly accuracy. Stav vyzkum no. 4:18-23 S '62.

1. Vyzkumný ustanov stavební výroby, Praha.

KAMARYT, P. prom. lekar (Trencin, OUNZ)

Occurrence of disease from *Strongyloides stercoralis*. Cas. lek. cesk.  
97 no. 9:288-290 28 Feb 58.

I. Interna oddelenie OUNZ v Trencine, Prednosta MUDr D. Dieska.  
(STRONGYLOIDIASIS, case reports (Cz))

CZECHOSLOVAKIA

STEIJFA, M., Prof. Dr; VOJTOVA, H; KAMARYT, P; SKALNIK, L.

1. First Internal Medicine Clinic (I. vnitřní klinika), Brno (for Steijfa); 2. Microbiological Institute of the Medical Faculty (Mikrobiologický ústav lekárské fakulty), Brno

Prague, Vnitřní lékařství, No 10, 1963, pp 946-953

"Influenzal Pneumonia during the Influenza Epidemic of 1962."

(4)

VOJTOVA, H.; KAMARYT, P.; STEJFA, M.

Contribution to the causes of acute lung inflammations and their diagnosis. Vnitrní lek. 11 no. 3:226-236 Mr '65

1. Mikrobiologický ústav lekarské fakulty v Brně (prednosta:  
Dr. I. Jandásek) a I. vnitřní klinika v Brně (prednosta: prof.  
Dr. M. Stejfa).

SOVA, Zd., MVDr., Sc.C.; KOMAREK, J.; KAMARYTOVA, A.

Determination of glucose in the blood of clinically healthy horses and of horses with various internal diseases.  
Veterinarni medicina 7 no.2:141-148 '62.

1. Odseleci pro choroby vnitrní, Veterinární nemocnice,  
Pardubice.

KUPRIANOVA, A.K.; VAL'TSEV, V.K.; KAMARZIN, A.A.

Precipitation from fused salts. Report No.3: Precipitation of neodymium and praseodymium from molten potassium nitrate studied by the method of amperometric titration. Izv. SO AN SSSR no.7 Ser.khim.nauk no.2:29-33 '63. (MIRA 16:10)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya  
AN SSSR, Novosibirsk.

5 (4)

AUTHORS: Mikhaylov, V. A., Kamarzin, A. A. SOV/79-29-4-76/77

TITLE: On the Rational Method of Expressing the Composition in the Investigation of the Density of Solutions (Oratsional'nom sposobe vyrazheniya sostava pri izuchenii plotnosti rastvorov)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 4, pp 1398 - 1399 (USSR)

ABSTRACT: If the formation of a system, as e. g. that of an ideal solution or of a mechanical mixture is not accompanied by a change in volume, it is known that the density is an additive function of the composition only if expressed in percents by volume. The additivity of the density is proved by the simplest method for ideal systems if it is expressed in percents by volume (Ref 1). Nevertheless, many authors (Refs 2-14) express in the case of the investigation of the density of binary systems the composition in percents by mole, and try to draw conclusions on the intensity of the chemical reaction in the system and on the change in volume in the case of its formation from the form of the obtained curves density - composition. The final conclusion drawn by I. M. Bokhovkin (Ref 7) on the intensification of the reaction of acetone with the chlorine derivatives of acetic

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APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000620220014-4"

On the Rational Method of Expressing the Composition SOV/79-29-4-76/77  
in the Investigation of the Density of Solutions

acid according to the substitution of hydrogen by chlorine in the radical of acetic acid may serve as an example of a wrong conception. The determination of the density of a mixture of solvents of A. Ya. Deyoh (Ref 15) according to a "common additivity formula" if the composition is expressed in percentages by weight and the calculated density is then compared with the experimental one is wrong as well. Thus, the composition has to be expressed in percents by volume in the case of the investigation of the density of solutions. Only then the form of the isothermal line of density permits right conclusions on the changes in volume in the case of the formation of the system (Refs 16,17). There are 17 Soviet references.

ASSOCIATION: Institut neorganicheskoy khimii Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Inorganic Chemistry of the Siberian Department of the Academy of Sciences USSR)

SUBMITTED: July 19, 1958

Card 2/2

KAMAS, F.

CZECHOSLOVAKIA / Chemical Technology. Chemical Products and Their Applications. Artificial and Synthetic Fibers. H

Abs Jour : Re Zh Khim., No 12, 1959, No 44347

Author : Kamas, F.; Hadobas, F.; Zamorsky, Z.; Vesely, R.  
Inst : Not given  
Title : A Modified Polyethyleneterephthalate

Orig Pub : Chem. prumysl, 1958, 8, No 6, 327-330

Abstract : The high regularity of the polyethyleneterephthalate structure and the considerable content of aromatic nuclei in the chain are the causes of a number of difficulties in conversion of this polymer into fiber (a comparatively high point in transition of the second order, an insufficient ability to take dye). In an effort to modify properties of polyethyleneterephthalate, the authors conducted a co-polycondensation of ethyleneglycol and terephthalic acid with dimethylisophthalate, diethyleneglycol and methyl ester of

Card 1/2

KAMAS, F.

PHASE I BOOK EXPLOITATION

SLOVAK/4311

Lacko, Vladimír, Engineer, Miloš Bačák, Engineer, František Hadobáš, Engineer,  
František Kamas, Antonín Majrich, Doctor, Engineer, and Bohumil Piller

Polyesterové vlákna (Polyester Fibers) Bratislava, Slovenské vyd-vo tech. lit-ry,  
1959. 291 p. 1,200 copies printed.

Reviewers: Artur Stoy, Docent, Engineer, and Štefan Tomašovič, Engineer; Tech. Ed.:  
Klára Kováčová, Engineer; Chief Ed.: Pavol Holéczy, Engineer;

Resp. Ed.: Klára Kováčová, Engineer.

PURPOSE: This book is intended for senior staff members in the chemical and textile industries, and for students in special schools. It may also be of interest to the general reader.

COVERAGE: The book describes the treatment of raw materials for production of polyester fibers, the technology of semiproducts, and the production, finishing, dyeing and spinning of polyester fibers. Important theoretical concepts concerning the properties of polyesters and polyester fibers are discussed. This is the first book in Slovak on polyester fibers describing the theoretical principles and steps in the production of synthetic fibers placing particular emphasis on the practical side of the subject.

Card 1/12

L 13146-63  
PC-4/Fr-4/Pab-4

EPR/EWF(1)/EPF(c)/BDS/FS(w)-2 AFITC/ASD/BSD-3/SSD Pe-4/

RM/WH/IJP(C)

G/004/63/010/004/002/004

AUTHOR:

Drexler, J.; Kamas, F.; and Vesely, R.

TITLE:

The use of diethyl hexyl isophthalate as a plasticizer for polyvinyl chloride

PERIODICAL: Plaste und Kautschuk, v. 10, n. 4, 1963, 205-210

TEXT: The application of diethyl hexyl isophthalate (dioctyl isophthalate; DOI) as a plasticizer for polyvinyl chloride (PVC) was studied. The properties of PVC films stabilized with DOI were investigated by determining stress-strain characteristics, evaporation rates of plasticizer from film, film flow properties, solvation, and effects of elevated temperature. The results were compared with those obtained on films plasticized with dioctyl phthalate (DOP), dioctyl adipate (DOA), dioctyl sebacate (DOS), and 1:1 mixtures of these with DOI, respectively. The results are summarized in Table 3. The properties of the films plasticized with DOI were found to be generally similar to those plasticized with DOP (the plasticizer most often used for PVC) while the viscosity of the DOI-containing PVC pastes was more stable than of those containing DOP. DOI could be added in a 1:1 ratio to DOA, or DOS without any impairing

Card 1/3

L 13146-63

G/004/63/010/004/002/004

The use of diethyl hexyl ....

ment in the cold-resistant properties of either. Four tables, eight charts, and 13 references (4 Czechoslovak, 9 Western).

ASSOCIATION: Institute for Rubber and Plastics Technology, Gottwaldov, Czechoslovakia. [Abstracter's note: Original Czech name of institute not given.]

Card 2/B2

KAMAS, Michal, ins.

Compensation of the mine power factor. Energetika Cz 13 no.1:  
31-33 Ja '63.

1. Dul Nosek, n.p., SKD-Kladno.

KAMASHCHENKO, A., starshina 2-oy stat'i; POVETKIN, V., starshiy matros;  
MEDENETS, L., starshiy matros

Thanks to a rearrangement of the vanes. Starsh.-serzh. no.5:31 My '63.  
(MIRA 16:10)

KAMASHEV, A.V., inzh.

Cutting wood with the knives of a brush chopper. Trudy  
VNIIGIM 35:113-120 '60. (MIRA 14:9)  
(Agricultural machinery)

"APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000620220014-4

KAMASHEV, F.K., inzh. (Kazan')

Automatic reporting signaling. Put' i put. khoz. no. 8:7 Ag '58.  
(MIRA 11:8)

(Railroads--Signaling)

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000620220014-4"

KAMASHEV, I.X.; FILICHKIN, G.L.; BEDERSON, A.M., red.; SUVORINA, T.M., red.; NEUDAKINA, N.G., tekhn. red.

[Economics of the lumbering industry] Voprosy ekonomiki lesnoi promyshlennosti; sbornik statei. Perm', Permskoe knizhnoe izd-vo, 1959. 176 p. (MIRA 16:10)  
(Perm Province--Lumbering)  
(Perm Province--Wood-using industries)

"APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000620220014-4

KAMASHINA, V.P., kand.med.nauk (Odessa)

Errors in the diagnosis of sialolithiasis. Probl. chel.-lits. Khir.  
no.1:133-137 '65. (MIRA 18:10)

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000620220014-4"

KUZ'MIN, V.N.; KAMASHEV, Yu.M.

Using Hall e.m.f. transducers for measuring the dynamics of magnetic fields of dispersion in pulsed accelerators. Izv. vys. ucheb. zav.; fiz. no.4:158-162 '59. (MIRA 13:3)

1.Tomskiy politekhnicheskiy institut imeni S.M. Kirova.  
(Particle accelerators) (Magnetic fields)

L 29715-66 EEC(k)-2/EWT(d)/EWT(m)/FSS-2/EWP(w) IJP(c) EM/WW/BC  
ACC NR: AP6015583 (N) SOURCE CODE: UR/0146/66/009/002/0101/0106

AUTHOR: Kamashev, Yu. M.

ORG: Tomsk Polytechnical Institute im. S. M. Kirov (Tomskiy politekhnicheskiy institut)

TITLE: Effect of radial rigidity of the gyrochamber on gyroscope vibrations

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 2, 1966, 101-106

TOPIC TAGS: gyroscope suspension, gyroscope system, vibration analysis

ABSTRACT: The amplitudes of forced vibrations of a gyroscopic instrument are determined for the cases where the rotor is dynamically out of balance with regard to the radial rigidity of the gyrochamber. Equations of motion are given for the gyroscope assuming that the deviation from perpendicular for the frames in the suspension is small and that the center of gravity for the rotor coincides with the point of intersection of the axes of the Cardan suspension. It is shown that the rotor describes elastic oscillations with respect to the gyrochamber when radial rigidity is reduced and that these oscillations are not transmitted to the internal axis of the suspension. Orig. art. has: 3 figures, 11 formulas.

SUB CODE: 20/7 / SUBM DATE: 03Apr65 / ORIG REF: 002

UDC: 531.383

Card 1/1 (1)

47  
E

KAMASHEV, Yu.M.

Effect of the rigidity of the gyroscope case and of the  
gyrowheel shaft on the motion of a gyroscope. Izv. vys.  
ucheb. zav.; prib. 7 no.1:95-102 '64. (MIRA 17:9)

1. Leningradskiy institut aviationsonnogo priborostroyeniya.

ACCESSION NR: AP4019000

S/0146/64/007/001/0095/0102

AUTHOR: Kamashev, Yu. M.

TITLE: Effect of gyro-case and rotor-axle rigidity on the gyroscope motion

SOURCE: IVUZ. Priborostroyeniye, v. 7, no. 1, 1964, 95-102

TOPIC TAGS: gyro, gyroscope, gyro case, gyro rotor, gyro rotor axle, gyro motion, gyro structure deformation, gyro structure rigidity

ABSTRACT: A theoretical investigation is offered of the effect of elastic deformation of the gyro case upon the motions of a gyro with three degrees of freedom. Kinetic and potential energies of the gyro are determined by solving differential equations set up in accordance with the second Lagrange method. It is found that elastic members in the gyro system cause a decrease in its nutational oscillation frequency and also increase the frequency of its elastic oscillations. The radial rigidity  $C_m$  of the gyro-case end lids should meet this

Card 1/2

ACCESSION NR: AP4019000

condition:  $C_m^* < C_{m\ crit} > C_{m\ ent}$ , in order to avoid resonance conditions.

Here:

$$C_{m\ crit} = J_y \cdot \frac{J_{xp}^2 \cdot \cos^2 \theta_0 - J_c J_{sp}}{J_{xp}^2 \cdot \cos^2 \theta_0 - J_s J_c} \cdot Q^2$$

$$C_{m\ ent} = (J_c - J_{sp} \cdot \cos^2 \theta_0 \cdot \sin \theta_0) \cdot \frac{J_{xp}^2 - J_s J_{sp}}{J_{xp}^2 \cdot \cos^2 \theta_0 - J_s J_c} \cdot Q^2$$

where  $J$  are moments of inertia,  $\theta_0$  is the deviation of the gyro principal axis from the stationary system of coordinates. Orig. art. has: 3 figures and 22 formulas.

ASSOCIATION: Leningradskiy institut aviatsionnogo priborostroyeniya  
(Leningrad Institute of Aviation Instruments)

SUBMITTED: 25 May 63

DATE ACQ: 23 Mar 64

ENCL: 00

SUB CODE: AE, CG

NO REF SOV: 004

OTHER: 001

Card 2/2

YEGOROV, A.P., shofer; VOYTANIK, N.M., shofer; KOZINTSEV, D.K., shofer;  
POLULYAKH, V.Ya., shofer; KAMATSKIY, V.N., shofer; VARSHAVSKAYA,  
A.A., shofer; VATULIN, G.N., shofer; SHANDURSKIY, P.T., shofer;  
YEMEL'YANOV, G.A., shofer; VERBOV, A.G., shofer; DANILETS, P.P.,  
shofer; BOGANCHENKO, V.A., shofer; PRUDNIKOV, A.F., shofer;  
V'YUNIKOV, S.I., shofer; SOLOVEY, I.N., shofer; MURASHKO, D.F., shofer

We prize our workers' honor. Avt. transp. 40 no.12:3-4 D '62.  
(MIRA 15:12)

1. Simferopol'skiy avtobusnyy park (for Yegorov, Voytanik).
2. Simferopol'skiy taksomotornyy park (for Murashko, Kozintsev).
2. Kerchenskiy avtobusno-taksomotornyy park (for Polulyakh).
4. Yevpatoriyiskiy avtobusno-taksomotornyy park (for Kamatskiy).
5. Yaltinskiy taksomotornyy park (for Varshavskaya). 6. Feodosiyskiy taksomotornyy park (for Varshavskaya). 7. Sevastopol'skiy avtobusno-taksomotornyy park (for Yemel'yanov). 8. Simferopol'skiy gruzovoy avtopark (for Verbov). 9. 2-y Simferopol'skiy gruznovoy avtopark (for Verbov). 9. 2-y Simferopol'skiy gruzovoy avtopark (for Danilets).
10. Bakhchisarayskiy avtopark (for Boganchenko). 11. Sevastopol'skiy avtopark (for Prudnikov). 12. 1-y Simferopol'skiy gruzovoy avtopark (for V'yunikov, Solovey).

**Preparation of thiophosphinic acids containing asymmetric phosphorus.** A. E. ARBUZOV AND G. KH. KAMAL. *J. Russ. Phys.-Chem. Soc.*, 61, 2037-42 (1929).—Various acids of the types  $\text{PR}'\text{SOH}$  and  $\text{PR}'\text{SSH}$  have been prep'd. with the object of obtaining them in optically active forms. The only one to be obtained cryst. is phenylbenzylmonothiophosphinic acid, which is being investigated further.  $\text{PPh}(\text{SET})_2$ , b.p. 143-4°,  $d_0^{20}$  1.1417, prep'd. by treating mercaptan (1 mol.) in ether with Na and phenyl chloride (0.8 mol.), forms a cryst. compd. with  $\text{CuBr}$ . At 180° it combines with S giving rise to the compd.  $\text{C}_6\text{H}_5\text{S}_2\text{Pb}$ , b.p. 191-2°,  $d_0^{20}$  1.2201, which is hydrolyzed by  $\text{HtONa}$  to the cryst. salt,  $\text{PPh}(\text{S})\text{EtONa}$ , but the corresponding acid could not be obtained cryst. When heated with  $\text{EtI}$  in a sealed tube at 130°, the thio ether,  $\text{PPh}(\text{SEt})_2$ , undergoes isomerization to form  $\text{PPhEt}(\text{SEt})\text{S}$ , b.p. 160-70°,  $d_0^{20}$  1.1093, which, with  $\text{EtONa}$ , gives the cryst. *Na phenylethylmonothiophosphate*,  $\text{PPhEt}(\text{ONa})\text{S}$ , but the corresponding acid was obtained only as a syrup. The *isobutyl ether*,  $\text{PPh}(\text{SC}_2\text{H}_5)_2$ , b.p. 191-2°,  $d_0^{20}$  1.0637, forms  $\text{S-PPh}(\text{SC}_2\text{H}_5)_2$ , with flowers of S, and, when treated with  $\text{BrCH}_2\text{CO}_2\text{Et}$ , yields a product giving the cryst. *Na salt*,  $\text{S-PPh}(\text{ONa})\text{CH}_2\text{CO}_2\text{Et}$ ; the corresponding acid and its cinchonine and brucine salts did not crystallize. The action of  $\text{ICH}_2\text{CH}_2\text{CO}_2\text{Et}$  on the thio ether,  $\text{PPh}(\text{SC}_2\text{H}_5)_2$ , gives  $\text{C}_6\text{H}_5\text{H}_2\text{S}_2\text{Pb}$ , b.p. 200-6°, but hydrolysis of this failed to give a cryst. acid. Treatment of the thio ether,  $\text{PPh}(\text{SEt})_2$ , with  $\text{PhCH}_2\text{Cl}$  at 200° gave  $[\text{S-PPh}(\text{CH}_2\text{Ph})\text{S}]^{\{2\}}$ , m. 145-6°, and an oily compd.  $\text{S-PPh}(\text{CH}_2\text{Ph})\text{SET}$ , b.p. 210-8°,  $d_0^{20}$  1.1820. The action of  $\text{PhCH}_2\text{Cl}$  on the ether  $\text{PPh}(\text{SC}_2\text{H}_5)_2$  at 210° gave the compd., m. 148-6°, similarly obtained from the ether,  $\text{PPh}(\text{SEt})_2$ , but vacuum distn. of the residue led to rapid decomposn., so that this residue was hydrolyzed directly, with formation of *phenylbenzylmonothiophosphinic acid*,  $\text{S-PPh}(\text{CH}_2\text{Ph})\text{OH}$ , m. 173-4°. B. C. A.

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#### 1.1.1.4 METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000620220014-4"

CO

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## PRICES AND PROPERTY INDEX

*Separation of unsaturated asymmetric alcohols into the optically active components.* G. KAMAL. *J. Gen. Chem. (U. S. S. R.)* 1, 400 (1931). While the sepn. of satd. alc. with asym. C atoms into their optical antipodes is well known, that of the unsatd. homologs is here investigated for the first time with *ethylvinylcarbinol* (I) and *phenylethylcarbinol* (II). The sepn. of the components of I in the form of the acid *ethylvinylcarbinol phthalate* (III) was successful, while that of II has failed because by the action of  $\text{Ca}(\text{ClO}_4)_2$  (IV) on II is obtained not the acid *phenylethylcarbinol phthalate* (V) but the isomeric acid *cinnamyl phthalate* and  $\text{Ph}(\text{CH}_2\text{CH}(\text{CHO})\text{CH}_2\text{CH}_2\text{Ph}$  (VI). To ascertain whether in the prepn. of III no mut. rearrangement with formation of the isomeric *o*-*ethylvinyl phthalate* (VII) took place, the brucine salts of III and VII were prepd. and examd.; they showed different phys. properties. III was obtained in 01.2-g. yield (90%) by dissolving 25 g. of I and 43 g. of IV in 20 g. of pyridine with gentle heating; then decomp., the reaction mass with 7% HCl, extg. with 200 cc. of  $\text{Et}_2\text{O}$ , washing with  $\text{H}_2\text{O}$ , extg. with aq.  $\text{Na}_2\text{CO}_3$ , acidifying with  $\text{AcOH}$ , extg. with  $\text{Et}_2\text{O}$ , washing, drying with anhyd.  $\text{Na}_2\text{SO}_4$ , and distg. off the  $\text{Et}_2\text{O}$ . Ca salt, m.p. 121.4°. *Benzylamine salt*, obtained in 2.8-g. yield by mixing 2.1 g. of III in 10 cc. of  $\text{Me}_2\text{CO}$  with 1 g. of  $\text{PhCH}_2\text{NH}_2$ , m.p. 102°, sol. in alc. and  $\text{Me}_2\text{CO}$ , insol. in petroleum ether. VII, obtained from 1 g. of allyl alc. (b. 136-8.5°) and 1.7 g. of IV in 2 cc. of pyridine as described above, an oil, sol. in alc.,  $\text{Et}_2\text{O}$  and  $\text{CaH}_2$ . *Brucine salt* of III, obtained in 10-g. yield (40%) from 10 g. of brucine in 500 cc. of  $\text{Me}_2\text{CO}$  and 47.5 g. of III in 100 cc. of  $\text{Me}_2\text{CO}$ , m. 143.4°, sol. in alc. and  $\text{Me}_2\text{CO}$ ,  $[\alpha]_D^{25} -12.24^\circ$  (alc.),  $[\alpha]_D^{25} -11.04^\circ$ . *Brucine salt* of VII, obtained in 2.0-g. yield (87%) from 1 g. of VII in 5 cc. of  $\text{Me}_2\text{CO}$  and 1.99 g. of brucine in 20 cc. of  $\text{Me}_2\text{CO}$ , m.p. 83.0°,  $[\alpha]_D^{25} -7.0^\circ$  (alc.). *d*-III, obtained in 3.1-g. yield by decomp. 8 g. of the brucine salt with dil. HCl, extg. with  $\text{Et}_2\text{O}$ , washing with dil. HCl and then with  $\text{H}_2\text{O}$ , drying with anhyd.  $\text{Na}_2\text{SO}_4$ , distg. off the  $\text{Et}_2\text{O}$  and drying in vacuo,  $[\alpha]_D^{25} 8.99^\circ$  (alc.),  $[\alpha]_D^{25} 9.25^\circ$  ( $\text{Et}_2\text{O}$ ). *Benzylamine salt* of *d*-III, obtained from 2.2 g. of *d*-III and 1.05 g. of  $\text{PhCH}_2\text{NH}_2$  in  $\text{Me}_2\text{CO}$ , m. 80.0°,  $[\alpha]_D^{25} 7.1^\circ$  (alc.),  $[\alpha]_D^{25} 8.1^\circ$  ( $\text{H}_2\text{O}$ ). *d*-I, obtained in 0.0 g. yield when 22.3 g. of III (prepd. by saponif. 61 g. of the brucine salt) was saponif. with 11 g. of KOH in alc. at room temp., then allowed to stand 2 days, poured into  $\text{H}_2\text{O}$ , extd. with  $\text{Et}_2\text{O}$ , washed with  $\text{H}_2\text{O}$ , dried with  $\text{K}_2\text{Cr}_2\text{O}_7$  and the  $\text{Et}_2\text{O}$  expelled, b. 110.2°,  $[\alpha]_D^{25} 10.18^\circ$  (alc.). The mother liquor from the brucine salt of *d*-III was decomp. with HCl. Attempts to obtain crystall. salts of *L*-III with alkaloids have failed. *L*-Phenylethylamine salt of III, m. 142-3.6°,  $[\alpha]_D^{25} -8.61^\circ$  (alc.). *L*-I, obtained in 8.2-g. yield by saponif. 19 g. of III resulting from the decomp. of the brucine salt left in the mother liquor after sepn. of the 4-component,  $[\alpha]_D^{25} -6.68^\circ$ ; distd. at 111.2°,  $[\alpha]_D^{25} -7.08^\circ$ .

CHAR. BLANC

Preparation of phosphonium compounds with an asymmetrical atom of phosphorus.—*On the sepn. of phosphonium compds. with an asymm. P atom into their optical isomers there were prep'd. quaternary P derivs. of the type R<sub>1</sub>R<sub>2</sub>R<sub>3</sub>R<sub>4</sub>P(X) (X = acid radical). The initial phosphine was obtained from PhEt<sub>2</sub>(PhCH<sub>3</sub>)PBr by decompsn at high temp. in CO<sub>2</sub>. The reaction proceeds probably thus: PhEt<sub>2</sub>(PhCH<sub>3</sub>)PBr → PhEt<sub>2</sub>(PhCH<sub>3</sub>)P + C<sub>2</sub>H<sub>4</sub> + HCl and PhEt<sub>2</sub>P + PhCH<sub>3</sub>Cl; PhEt<sub>2</sub>(PhCH<sub>3</sub>)P + PhCH<sub>3</sub>Cl*

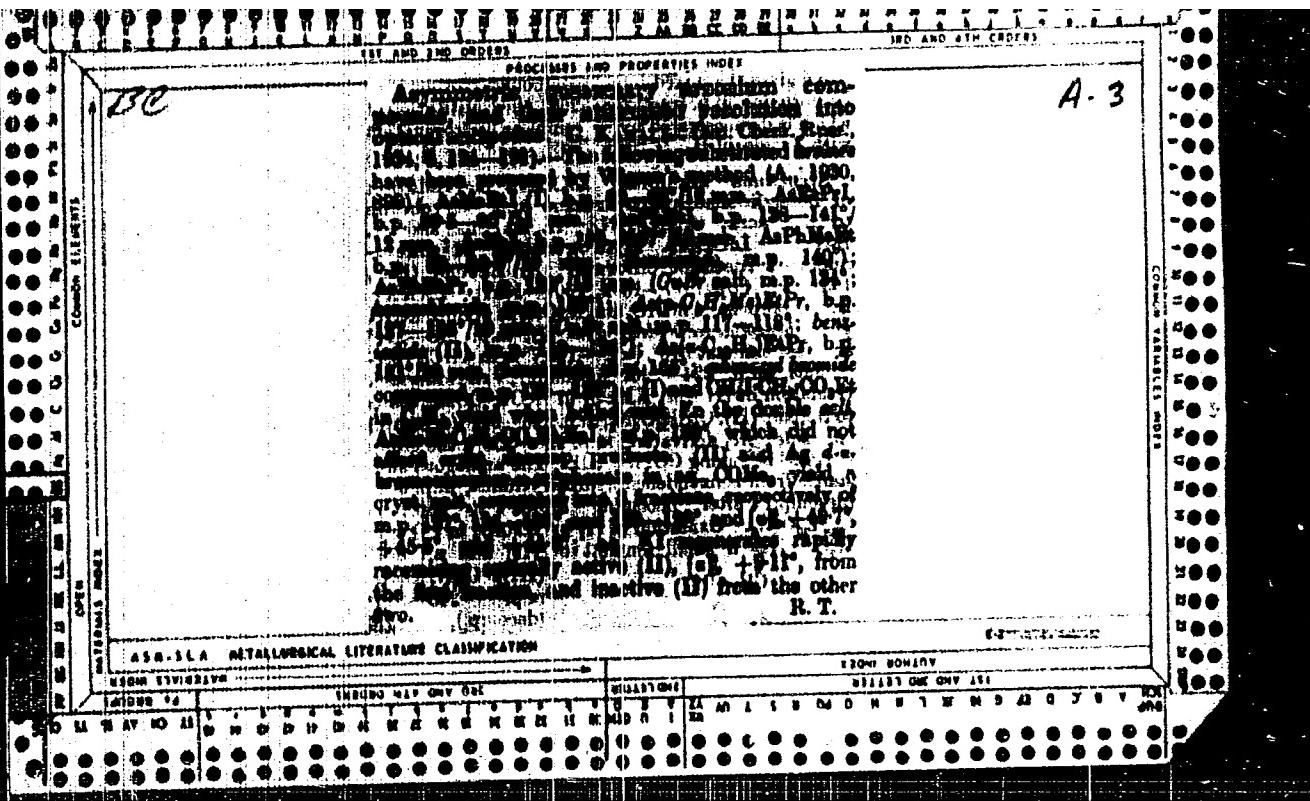
→ PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>P; PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>PCl → Ph(PhCH<sub>3</sub>)<sub>2</sub>P + C<sub>2</sub>H<sub>4</sub> + HCl, of which were isolated PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>P, PhEt<sub>2</sub>P and Ph(PhCH<sub>3</sub>)<sub>2</sub>P. By the interaction of PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>Ac<sub>2</sub>Cl and PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>Br with Ag salts of o.o. and d-n bromocamphorulonic acids were obtained non-crystallizable syrupy products, the sepn. of which into optical isomers was impossible. PhPCl<sub>3</sub> was prep'd. by decompsn. by the method of Michaelis (Ann. 181, 283(1870)) whereby a mixt. of C<sub>2</sub>H<sub>4</sub>, PCl<sub>3</sub> and AlCl<sub>3</sub> was continuously heated 30 hrs. in a current of CO<sub>2</sub>. The following compds. were prep'd. in a current of CO<sub>2</sub>: PhEt<sub>2</sub>P, b.p. 106-7°, was obtained in 70-80% yield, from PhPCl<sub>3</sub> and EtMgBr (Meisenheimer, et al., C. A. 21, 60). PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>PCl, m. 104-5°, from 29 g. PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>Cl and 16 g. of PhCH<sub>3</sub>Cl by heating in an oil bath. PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>P, by heating PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>Cl 30 hrs.; C<sub>2</sub>H<sub>4</sub> first came over and then 20 g. of a liquid, which was washed with concd. NaOH to remove HCl, then extd. with Et<sub>2</sub>O, dried with anhyd. Na<sub>2</sub>SO<sub>4</sub>, the H<sub>2</sub>O expelled and redistilled., giving 6.6 g. PhEt<sub>2</sub>P, b.p. 100-21°, 8.5 g. PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>P, b.p. 150-90°, and 3.4 g. Ph(PhCH<sub>3</sub>)<sub>2</sub>P, b.p. <170°. PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>Ac<sub>2</sub>Cl, by heating 3 hrs. at 120° in an oil bath 8 g. PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>P and 3.5 g. AcCH<sub>3</sub>Cl, then purifying, and digesting with abs. Et<sub>2</sub>O to remove impurities. PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>BrCl, then PBr, m. 166-8°, by refluxing 5 g. PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>P 3 hrs. in 20 cc. of abs. Et<sub>2</sub>O and 4.3 g. BrCH<sub>2</sub>Br in 30 cc. Et<sub>2</sub>O, and then evaps. the Et<sub>2</sub>O, PhEt<sub>2</sub>(PhCH<sub>3</sub>)<sub>2</sub>Br, m. 170-1°, from 5 g. Ph(PhCH<sub>3</sub>)<sub>2</sub>P in 30 cc. of abs. Et<sub>2</sub>O and 1.9 g. EtBr in 10 cc. Et<sub>2</sub>O.

## AIA-51A METALLURGICAL LITERATURE CLASSIFICATION

CA

Preparation of asymmetric organic compounds of arsenic with the coordinate number three. I. G. Kh. Kamal. *Vestn. Bulgarov Inst. Chirn. Tekh. Kaza* No. 1, 1938 (1934); cf. C. A. 28, 12869. —The ternary arsenes with a coordinate no. 3 with 3 different radicals are examples of the arsinocarboxylic acids of the type  $R_3As(CO_2H)_2$  and the structure  $[R_3AsCO_2H]_2$  (Werner). The complex of the internal sphere is asym., while the H of the external sphere can be substituted for the sepn. of the compd. into optically active isomers.  $Mel[(-)-H_3C_6H_4]_2As$  (I) and  $Mel[(+)-H_3C_6H_4]_2As$  (II) were prep'd., but failed to give the corresponding carboxylic acids by the Grignard reaction and by the nitrile method of Rosenmund (C. A. 14, 1646). A mixt. of  $Mel_2AsI$  and  $PhMgBr$  in  $Bu_2O$  refluxed 2 hrs. and decompd. with aq.  $NH_4Cl$  gave a 47% yield of I, b.p. 132-3°, d<sub>4</sub><sup>20</sup> 1.558, d<sub>25</sub><sup>20</sup> 1.5355.  $Mel(p-MeC_6H_4)_2AsI$  and  $PhMgBr$  in  $Bu_2O$  treated as above gave 12.1% II, b.p. 209-40°, d<sub>4</sub><sup>20</sup> 1.57, probably contaminated with some decompn. products. Chas. Blanc

## ASR-13A METALLURGICAL LITERATURE CLASSIFICATION



*p*-Methoxyphenyl dichlorophosphine. Cd in Kauai. J. Gen. Chem. (U. S. S. R.) 6, 182-3 (1934).—McOC<sub>6</sub>H<sub>4</sub>PCl<sub>2</sub>, b.p. 140-0.5°, d<sub>1</sub> 1.3404, d<sub>4</sub> 1.3406, was obtained in 43.4 g. (88%) yield when a mixt. of 100 g. PhOMe, 400 g. PCl<sub>3</sub> and 60 g. HCl was refluxed 6 hrs. on a water bath, the reaction product digested in the cold for 12 hrs. first with 700 cc. and then with 800 cc. of low-boiling petr. ether, the latter dried, off., the residue fractionated at 11 mm. pressure and the fractions b.p. 130-20° redistilled. I. b.p. is about 130°, b. 245-53°, d<sub>4</sub> 1.0764, obtained by Michaelis (*J. Am. Chem.* 23, 248 (1891)), is probably a mixt. of I and PhOMe. I decompd. with H<sub>2</sub>O produced *p*-axis-diphosphine and (II), crystals from H<sub>2</sub>O, m. 114-14.3° (112°, Michaelis; 70-80°, Baldwinson). A mixt. of 0.5 g. II, 20 cc. alc. and 0.37 g. PhNH<sub>2</sub>, evapd. on a water bath, sepd. as MeOC<sub>6</sub>H<sub>4</sub>PO<sub>2</sub>H.H<sub>2</sub>NH<sub>2</sub>Me, crystals from alc., m. 97-98°. MeOC<sub>6</sub>H<sub>4</sub>PO<sub>2</sub>H.H<sub>2</sub>NH<sub>2</sub>Me, m. 99-100°.

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## A.I.S.I.A. METALLURGICAL LITERATURE CLASSIFICATION

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CIA-RDP86-00513R000620220014-4"

The preparation of asymmetric secondary arylarsinic acids. Cal'm Kh. Kamal. Trans. Kirov. Inst. Chem. Tech., Tashkent No. 5, p. 49-53 (1935).—For the prepn. of diarylarsinic acids the method of Bart (C. A. 17, 82) is superior to that of Blieke and Smith (C. A. 23, 2035). Blieke's phenyl- $\rho$ -tertiaryarsonic acid (I) was probably a mixt. of unisolated tetrarylarsine oxide and I. Pure I. m. 150-60°. I (m. 168-170°) was prep'd. in 41.8% yield from PhAsO and  $\rho$ -MeC<sub>6</sub>H<sub>4</sub>N<sub>3</sub>Cl, and in 35.4% yield from  $\rho$ -MeC<sub>6</sub>H<sub>4</sub>N<sub>3</sub>NO and PhN<sub>3</sub>Cl. PhMgBr and  $\rho$ -MeC<sub>6</sub>H<sub>4</sub>As gave impure I, m. 148-150°, in 19.4% yield. The diazonium compnd. from  $\rho$ -nitroaniline (73 g.) with 60 g. PhAsO gave  $\rho$ -nitrophenylphenylarsinic acid, m. 141° from alc. The NH<sub>4</sub>, Ba and Na salts are sol. in H<sub>2</sub>O and alc. The  $\rho$ -MeC<sub>6</sub>H<sub>4</sub>NH salt, m. 78-9°; the PhNH<sub>3</sub> salt, m. 102 °C. Lewis W. Blitz

CLASSICAL METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000620220014-4"

The stereochemistry of trivalent aromatic. II. Preparation of *s*-, *m*- and *p*-(methylphenylsulfonyl)benzoic acids and experiments to split them into optically active compounds. Gh. I. Kh., Kamal. *Ber. Akad.*, 1893-8 (1935); *J. Gen. Chem. (U. S. S. R.)*, 6, 176-81 (1936); cf. *C. A.* 29, 4746. — Efforts failed to split *m*-(methylphenylsulfonyl)benzoic acid (I) into optically active compds. The strychnine salt, cryst. with difficulty from concd. solns., m. 138-9°,  $[\alpha]_D^{25} -10.8^\circ$ ; the quinine salt m. 159-70°,  $[\alpha]_D^{25} -53.01^\circ$ . Both salts of the *p*-compd. of I, cryst. in needles, yield optically inactive acids. The *s*-compd. of I formed salts with alkaloids which did not crystallize. Slow addition of 100 g. PhAsO (III) and 120 g. MeI in 10-g. portions to a mixt. of 120 cc. 10% NaOH and 120 cc. 95% alc., refluxing 3 hr., neutralization with HCl and H<sub>2</sub>O (cc. excess HCl), and passing SO<sub>2</sub> through the soln., yields 140 g. dark yellow oily *m*-methylphenylsulfuric acid (IV), m. 120-1°. Slowly adding 50 g. IV with cooling to 4.13 g. Mg and 29.03 g. *p*-MeC<sub>6</sub>H<sub>4</sub>Br yields after boiling for 2 hr., decompsn. with NH<sub>3</sub> and estin. with Et<sub>2</sub>O, 30.9 g. *m*-methylphenyl-*p*-tolylsulfuric (IV), b.p. 166-7°. The corresponding *m*-compd. (V), prep'd. in 25.2 g. yield from 4.13 g. Mg, 29.8 g. *m*-MeC<sub>6</sub>H<sub>4</sub>Br and 50 g. III, b.p. 165-6°, d<sub>4</sub><sup>25</sup> 1.2871, d<sub>4</sub><sup>25</sup> 1.2563, n<sub>D</sub><sup>25</sup> 1.6190. The *s*-compd. (VI), prep'd. in 14.8 g. yield from 2.23 g. Mg, 15.7 g. *s*-MeC<sub>6</sub>H<sub>4</sub>Br and 27 g. III, b.p. 162-3°, d<sub>4</sub><sup>25</sup> 1.2765, n<sub>D</sub><sup>25</sup> 1.6210. IV (25 g.) and 41.3 g. KMnO<sub>4</sub> in 750 cc. H<sub>2</sub>O

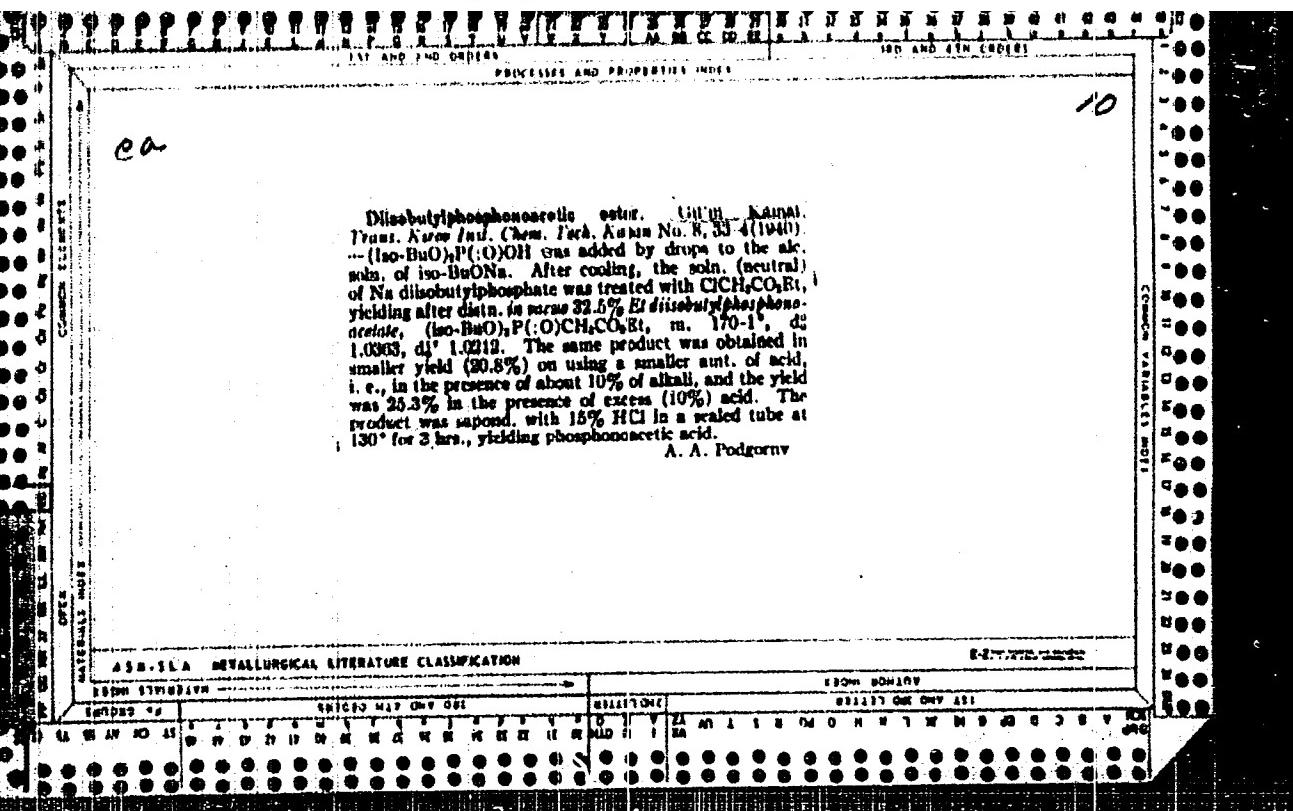
form methylphenyl-*p*-carboxyphenylarsine oxide-HCl (VII), m. 150°, sol. in  $\text{H}_2\text{O}$  and alc., insol. in  $\text{Et}_2\text{O}$ . Passing  $\text{H}_2\text{S}$  for 1 hr. through VII in water forms methylphenyl-*p*-carboxyphenylarsine sulfide, m. 150-60°. Passing 80

through 20 g. VII in 200 cc.  $H_2O$  and 1 cc. of alc. I produces *p*-(methylphenylsulfonyl)benzoic acid (VIII), m. 149-51°, sol. in alc.,  $H_2O$ ,  $CHCl_3$ , and acetone, insol. in  $H_2O$ . The NH salt of VIII is sol. in  $H_2O$ . Reactions of 4 g. and 2 g., resp., of VIII in 25 cc. and 10 cc., resp., of alc. with 4.0 g. strychnine in 150 cc. alc., and 2.2 g. quinine in 80 cc. alc., resp., yield the strychnine and quinine salts, m. 183-5° and 210-1°, resp. *Methylphenyl-m-carboxyphenylsulfonyl oxide-HCl* (IX), prep'd. from 20 g. V and 33 g.  $KMnO_4$  in 200 cc.  $H_2O$ , m. 148-50°, sol. in  $H_2O$  and alc. Passing  $H_2S$  for 1 hr. through IX in water forms *methylphenyl-m-carboxyphenylsulfuric sulfide*, m. 134-5°. The  $\alpha$ -compd. of VII, prep'd. from 13.8 g. VI and 22.9 g.  $KMnO_4$  in 400 cc.  $H_2O$ , m. 220-7°. The corresponding sulfide, m. 104-6°, forms the  $\alpha$ -compd. of I on reduction with  $SO_2$ . A. E. B.

**ASB-1A METALLURGICAL LITERATURE CLASSIFICATION**

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000620220014-4"



The stereochemistry of trivalent arsenic. III. Preparation of  $\beta$ -*(ethylphenylarsenyl)*benzoic acid and experiments to split it into optically active compounds. (Gill'm, Kamal, J. Gen. Chem. (U. S. S. R.), 10, 733-5 (1940); ref. C. A. 30, 4830g.)—Efforts failed to split  $\beta$ -*(ethylphenylarsenyl)*benzoic acid (I) into optically active compds. *Ethylphenyl-iodoarsine* (II) was prep'd. from PhAsO and EtI (instead of MeI) and converted to I by the methods used in prep'g. *p*-MeLi-Ac<sub>2</sub>Al(C<sub>2</sub>H<sub>5</sub>)<sub>2</sub>. II, m. 130-40°, d<sup>25</sup> 1.8406. *Ethylphenyl- $\beta$ -tolylarsine*, b. 173-5-4.8°, d<sup>25</sup> 1.2188, n<sub>D</sub><sup>25</sup> 1.6111. *Ethylphenyl- $\beta$ -carboxyphenylarsine oxide*, m. 154-5° (decompn.). *Ethylphenyl- $\beta$ -carboxyphenylarsine sulfide* (constis. were not dectd.), I, m. 124-5°; strychnine salt, m. 204-6°; quinine salt, m. 182-3°. C. B.

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**Some alkyl esters of aryl- and diarylarsenious acids.** Gili'm-Kamal and V. M. Zornitskaya. *J. Gen. Chem. (U. S. S. R.)* 10, 921-6 (1940). I. Arsenous acid exists in two tautomeric forms, As(OH)<sub>3</sub> and HAsO(OH)<sub>2</sub>. The alkyl esters of aryl- and diarylarsenious acids should show properties analogous to those of phosphorous acid esters. *Ph<sub>2</sub>As(OMe)*, b.p. 119-20°, d<sup>25</sup> 1.0441, d<sup>15</sup> 1.5417, n<sub>D</sub><sup>25</sup> 1.6985, yield 20.4%; *Ph<sub>2</sub>As(OEt)*, b.p. 117-18°, d<sup>25</sup> 1.3894, n<sub>D</sub><sup>25</sup> 1.6981, yield 13.3%; *Ph<sub>2</sub>As(OPr)*, b.p. 139-40°, b.p. 128-9°, d<sub>25</sub> 1.3324, n<sub>D</sub><sup>25</sup> 1.6100, yield 37.2%; *(*p*-Pr<sub>2</sub>C<sub>6</sub>H<sub>3</sub>)<sub>2</sub>As(OBu)*, b.p. 118-19°, d<sub>25</sub> 1.3461, d<sup>15</sup> 1.3229, n<sub>D</sub><sup>25</sup> 1.6100; *(*p*-Bu<sub>2</sub>C<sub>6</sub>H<sub>3</sub>)<sub>2</sub>As(OBu)*, b.p. 147-8°, d<sub>25</sub> 1.3428, d<sup>15</sup> 1.3208, n<sub>D</sub><sup>25</sup> 1.6111, yield 80.0%; (*p,p'*-Bu<sub>2</sub>O)<sub>2</sub>As(OBu), b.p. 144-4.5°, d<sub>25</sub> 1.3287, n<sub>D</sub><sup>25</sup> 1.6105; (*tert*-Am<sub>2</sub>)<sub>2</sub>As(OBu), b.p. 143-4.5°, d<sub>25</sub> 1.3294, d<sup>15</sup> 1.2928, n<sub>D</sub><sup>25</sup> 1.6402, yield 83.4%; *Ph<sub>2</sub>As(OEt)* (I), b.p. 100-6.7°, b.p. 127.04, d<sup>15</sup> 1.2345, n<sub>D</sub><sup>25</sup> 1.6023, yield 54.3%; *Ph<sub>2</sub>As(OPr)* (II), b.p. 174-5°, d<sub>25</sub> 1.2344, d<sub>25</sub> 1.2248, n<sub>D</sub><sup>25</sup> 1.5025; *Ph(*p*-C<sub>6</sub>H<sub>4</sub>)<sub>2</sub>As(OEt)*, b.p. 178-80°, d<sub>25</sub> 1.2821, d<sup>15</sup> 1.2644, n<sub>D</sub><sup>25</sup> 1.5220, yield 65.3%; *Ph(*p*-C<sub>6</sub>H<sub>4</sub>)<sub>2</sub>As(OPr)*, b.p. 188-9°, d<sub>25</sub> 1.3121, d<sup>15</sup> 1.2008, n<sub>D</sub><sup>25</sup> 1.5805, have been prep'd. from *PhAsCl*, *Ph<sub>2</sub>AsCl* and *Ph(*p*-C<sub>6</sub>H<sub>4</sub>)AsCl*, resp., and the corresponding Na alcoholate. The above compds. could not be brominated by heating with alkyl iodide. I. *CuI*, m. 160-1° (decompn.). II. *CuI*, m. 140-2°. The b.p.s. of some of the above compds. are compared with those of analogous derivs. of phosphorous acid and the results, given in a table, show that the derivs. of As do not have always a higher b. p. than the corresponding derivs. of P.  
Gertrude Berend

Lab. Organické Chemie  
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im. A.M. Butlerov.

### **Cerrado Herend**

## **AIU-11A METALLURGICAL LITERATURE CLASSIFICATION**

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APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000620220014-4"

(2)

Asymmetrical analogs of cycloidal oxides. Gil'm Kamu and V. M. Zorinatrova. *J. Gen. Chem. (U. S. S. R.)* 10: 1508-72 (1940).—A yield of 11.6 g. bis(methylethylarylsine) oxide (I) was obtained from 27 g. MeRAsI,  $b_1$  73-74° (Wigren,  $b_1$  67-8°, *C. A.* 24, 4259), I (10.5 g.) in 8.5 cc. of 10 N NaOH was agitated 30 hrs. with a soln. of 7.8 g.  $\text{ClCH}_2\text{CO}_2\text{H}$  neutralized with NaOH. HCl was added to the mixt. until acid to Congo red. The solvent was evapd. on a water bath, NaCl was filtered off and the filtrate put in a desiccator over  $\text{H}_2\text{SO}_4$ . After reduction of the aq. soln. of methylethylarylsilic acid with  $\text{H}_2\text{S}$  a noncrystallizable oily liquid with a very unpleasant odor was obtained. To a mixture of 87.5 cc. 10 N NaOH soln. and 68 cc. 90% alc. 40 g. RAsI was added with cooling. The resulting clear soln. was treated with 20.5 g. iso-Pr<sub>2</sub>N in small portions. The mixt. was heated 5 hrs. on a water bath, after which the alc. was driven off. The product was purified with HCl and  $\text{H}_2\text{S}$  was passed through the mixt. A dark brown oil sep'd. It was washed with  $\text{H}_2\text{O}$  and dried over  $\text{CaH}_2$ . Vacuum distn. (13-14 mm.) gave the following fractions: 87-90°, 6.6 g.; 90-125°, 1.6 g.; 125-7°, 16.4 g. Upon redistn. the 1st fraction b, 87-8°, d<sub>4</sub><sup>25</sup> 1.8185, d<sub>4</sub><sup>20</sup> 1.7955,  $n_D^{20}$  1.830. Ethylisopropylidocarbine (II) is a yellow mobile liquid, sol. in ether, alc.,  $\text{CaH}_2$ , liqd. in  $\text{H}_2\text{O}$ . It is a lacrymator. The 3rd fraction was ethyldidocarbine. I (6 g.) was mixed with 8 cc. 10 N NaOH and cooled. A yield of 76% theory (2.8 g.) of bis(ethylisopropylarylsine) oxide,  $b_1$  130-2°, was obtained. It is a colorless oily liquid of unpleasant odor. Bis(methylphenylarylsine) oxide (80-90% yield), d<sub>4</sub><sup>25</sup> 1.4224, d<sub>4</sub><sup>20</sup> 1.4400,  $n_D^{20}$  1.0250; bis(ethylphenylarylsine) oxide (60% yield), d<sub>4</sub><sup>25</sup> 1.3851, d<sub>4</sub><sup>20</sup> 1.3656,  $n_D^{20}$  1.0102; ethybenzylidocarbine,  $b_1$  130-70°, d<sub>4</sub><sup>25</sup> 1.3261; bis(ethylbenylarylsine) oxide (78% yield),  $b_1$  174-0°, d<sub>4</sub><sup>25</sup> 1.3000,  $n_D^{20}$  1.0600; and bis(phenyl-tolylarylsine) oxide, m. 78-9° (Blecke, m. 75-7°, *C. A.* 24, 1121 ONE ONLY ALL (3),  $b_1$  228-3°, were analogously prep'd. David Aronay

GIL'M KAMU

Lab. Org. Chem. Sci.-Res.  
Inst. im Butlerov, Kazan.

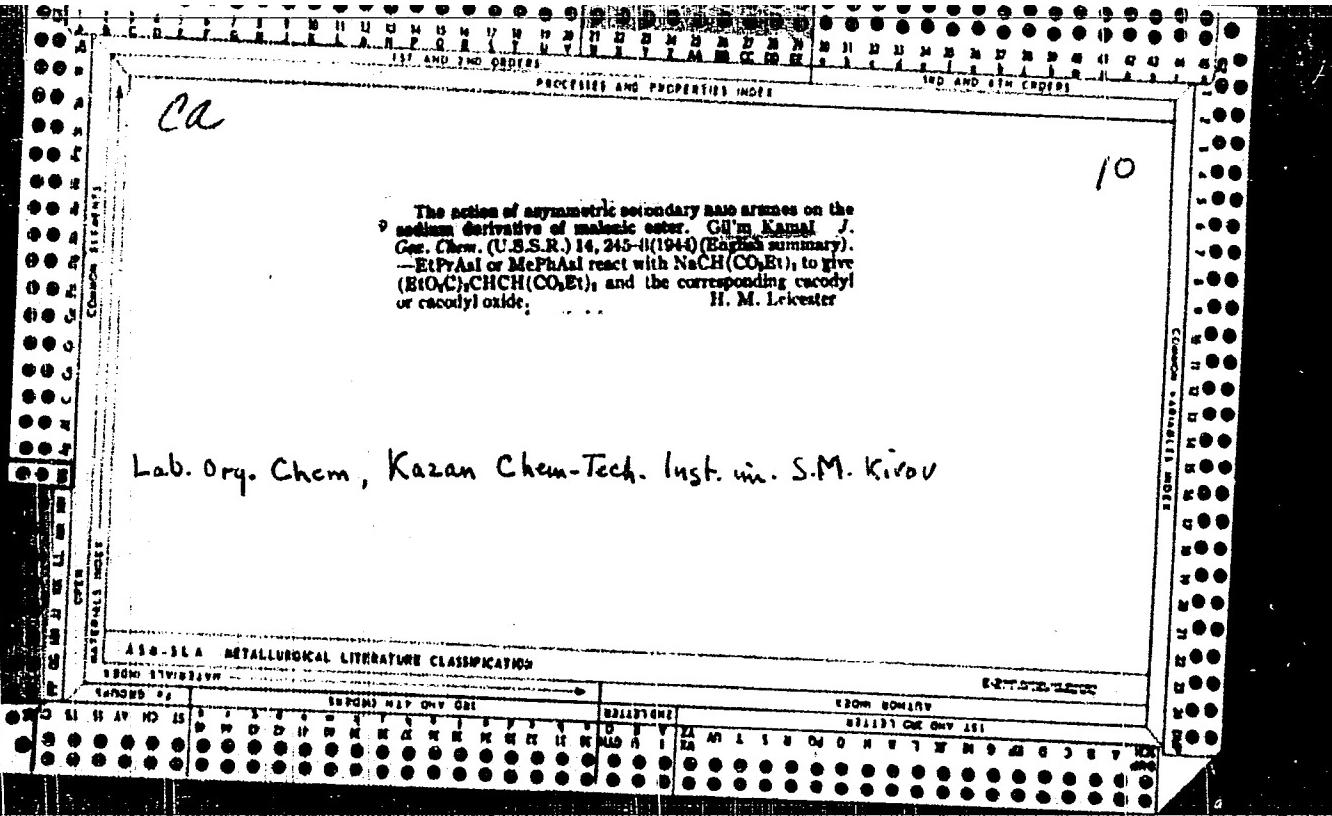
Sub. 1939

GIL'M KAMAI

Z. L. Khisamova and Gil'm Kamai - "The action of carbon tetrachloride on esters of p-tolyl phosphinous acid." (p. 1162)

SC: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1940, Vol. 20, No. 7.





KAMAL, G. KH.

The isopropyl ester of benzene phosphorous acid. A. E. Arbutov/G. Kh. Kamal, and O. N. Belorossova (Kazan Chem. Tech. Inst.), *J. Gen. Chem. (U.S.S.R.)* 15, 766-9 (1945).—When iso-PrOH and PhNMe<sub>2</sub> in dry Et<sub>2</sub>O are cooled and treated with PhPCl<sub>3</sub> in a CO<sub>2</sub> atm., they form a distillate, 60% of which is *di*-iso-*Pr* benzene phosphonite (I), b.p. 121-2°, d<sub>4</sub><sup>20</sup> 1.0103, d<sub>4</sub><sup>25</sup> 0.9952, n<sub>D</sub><sup>20</sup> 1.5021, and 35% iso-*Pr* phenylisopropylphosphinate (II), b.p. 146-7°, d<sub>4</sub><sup>20</sup> 1.0057, d<sub>4</sub><sup>25</sup> 1.0813, n<sub>D</sub><sup>20</sup> 1.4920, formed by isomerization of I. When I is heated to 150° in the presence of iso-PrI (III) it liberates MeCH<sub>2</sub>CH<sub>3</sub> and forms phenylisopropylphosphinic acid, m. 61-2°, which gives cryst. Na, K, Ca, and Ba salts. When I and III are allowed to stand 10 days at room temp., 44.1% isomerization to II occurs. Addn. of a little PhNMe<sub>2</sub> increases the isomerization to 95%.

H. M. Leicester

Lab. Organic Chem.

Action of carbon tetrachloride on alkyl esters of phosphorous acids. (1.) Kamal and I. P. Ugurova (Karan Chem. Tech. Inst.), *Zhur. Neorg. Khim.* (U.S.S.R.) 16, 1621-6 (1940) (in Russian).—Although  $\text{CHCl}_3$  could not be induced to react with  $(\text{RO})_3\text{P}^+$ , it was shown that  $\text{CCl}_4$  readily enters the well-known isomerization reaction with formation of dialkyl esters of trichloromethane phosphonic acid,  $(\text{NO}_2)_2\text{P}(\text{O})(\text{OC}_2\text{H}_5)_2$ . The reactions were conducted by heating equimol. mixts. of  $\text{CCl}_4$  and  $(\text{RO})_3\text{P}^+$  3 hrs. under reflux; the yields, although not stated in all cases, were good and ranged upward from 40% (iso- $\text{Pr}$  ester). The following products were obtained:  $\text{R} = \text{Me}$ ,  $b_3 110-12^\circ$ ,  $b_4 121-2^\circ$ ,  $d_5 1.4840$ ,  $d_8^0 1.4704$ ,  $n_D^{20} 1.4580$ ;  $\text{R} = \text{Et}$ ,  $b_3 129-30^\circ$ ,  $b_4 123-3^\circ$ ,  $d_5 1.4820$ ,  $d_8^0 1.4504$ ,  $n_D^{20} 1.4583$ ; allyl,  $b_3 136-8^\circ$ ,  $d_5 1.1719$ ,  $d_8^0 1.600$ ,  $n_D^{20} 1.4552$ ;  $\text{iPr}$ ,  $b_3 144-5^\circ$ ,  $d_5 1.2003$ ,  $d_8^0 1.3456$ ,  $n_D^{20} 1.4582$ ;  $\text{iso-Pr}$ ,  $b_3 147-30^\circ$ ,  $d_5 1.2350$ ,  $d_8^0 1.2906$ ,  $n_D^{20} 1.4477$ ;  $\text{Bu}$ ,  $b_3 143-6^\circ$ ,  $d_5 1.1814$ ,  $d_8^0 1.1670$ ,  $n_D^{20} 1.4521$ ;  $\text{iso-Bu}$ ,  $b_3 144-8^\circ$ ,  $d_5 1.2114$ ,  $d_8^0 1.1949$ ,  $n_D^{20} 1.4487$ . The esters are mobile colorless liquids which darken on exposure to light; hydrolysis with 15%

HCl at 150° gives the corresponding alkyl chloride,  $\text{CO}_2$ , and  $\text{H}_2\text{PO}_4^-$ . (G. M. Kopalapoff)

Lab. Org. Chem.

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**Esters of cacodylphosphonic acid.** G. Kamal and O. N. Belorossova. *Bull. Acad. Sci. U.R.S.S., Classe Sci. Chim.* 1947, 101-6.—By using an Arbuzov reaction a no. of cacodylphosphonic acid esters were prep'd. in good yields. To 115 cc. 10 N NaOH and 180 cc. 65% EtOH was added 100 g. EtAsI, followed by 60 g. BuBr, and the mixt. was boiled 8 hrs. to give 70.3 g. *iBu*BuAsI, b.p. 107-8°, b.p. 112-13°, d<sub>20</sub><sup>20</sup> 1.7190, d<sub>25</sub><sup>25</sup> 1.0818. Similarly, 60 g. iso-AmBr and 100 g. EtAsI gave 79.7% *iso-AmEtAsI*, b.p. 118-19°, d<sub>20</sub><sup>20</sup> 1.8151, d<sub>25</sub><sup>25</sup> 1.7807. PhAs(OH)<sub>2</sub> (75 g.) with 70 g. BuBr in alc. NaOH gave 75% *PbBu<sub>2</sub>AsI*, b.p. 147-8°, d<sub>20</sub><sup>20</sup> 1.3860, d<sub>25</sub><sup>25</sup> 1.3692; similarly, 47 g. allyl bromide and 60 g. PhAsO in alc.-aq. NaOH gave 60% *Ph(C<sub>2</sub>H<sub>5</sub>)<sub>2</sub>AsBr*, b.p. 138-9°, d<sub>20</sub><sup>20</sup> 1.4913, d<sub>25</sub><sup>25</sup> 1.4730. From 20 g. EtBuAsI and 11.5 g. (EtO)<sub>2</sub>P after standing overnight was obtained 100% [*E*Bu<sub>2</sub>AsP(OEt)<sub>2</sub>]<sub>2</sub>I, m. 182-3° (from EtOH-Et<sub>2</sub>O).

which results from addn. of I<sub>2</sub> to the primary reaction product, EtBuAsPO(OEt)<sub>2</sub>. To (EtO)<sub>2</sub>PONa (from 1.50 g. Na and 0.6 g. (EtO)<sub>2</sub>POH) in 100 cc. cold Et<sub>2</sub>O was added 20 g. EtBuAsI and the mixt. was boiled 3 hrs., filtered, and distil. to give *E*Bu<sub>2</sub>AsPO(OEt)<sub>2</sub>, b.p. 112-13°, d<sub>20</sub><sup>20</sup> 1.2054, d<sub>25</sub><sup>25</sup> 1.1865. Similarly, iso-AmEtAsI gave 52% *iso-AmEt<sub>2</sub>AsPO(OEt)<sub>2</sub>*, b.p. 118-20°, d<sub>20</sub><sup>20</sup> 1.2858, d<sub>25</sub><sup>25</sup> 1.2718 (use of the K deriv. gave but 43% yield); EtPhAsI gave *E*Ph<sub>2</sub>AsPO(OEt)<sub>2</sub>, b.p. 144-5°, d<sub>20</sub><sup>20</sup> 1.2899, d<sub>25</sub><sup>25</sup> 1.2734. Ph(CH<sub>2</sub>:CHCH<sub>2</sub>)AsI with either (EtO)<sub>2</sub>P or (EtO)<sub>2</sub>PONa gave *Ph(C<sub>2</sub>H<sub>5</sub>)<sub>2</sub>AsPO(OEt)<sub>2</sub>*, b.p. 142-3°, d<sub>20</sub><sup>20</sup> 1.2508. PhAsCl and (EtO)<sub>2</sub>PONa gave *Pb<sub>2</sub>AsPO(OEt)<sub>2</sub>*, b.p. 170-7°, d<sub>20</sub><sup>20</sup> 1.2971, d<sub>25</sub><sup>25</sup> 1.2845; BuPhAsBr gave *BuPb<sub>2</sub>AsPO(OEt)<sub>2</sub>*, b.p. 162-3°, d<sub>20</sub><sup>20</sup> 1.2111, d<sub>25</sub><sup>25</sup> 1.2345. The compds. on heating to 150° with 15% HCl broke down completely, showing rather poor stability of the P—As bond.  
G. M. Kosolapoff

Chem.-Inst., Kazan Branch, AS USSR

ASIA-METALLURGICAL LITERATURE CLASSIFICATION

1954-1955 INDEX

The reaction of the preparation of phosphonomalonate esters. A. B. Arshov and O. Kamal (Kazan Sect., Acad. Sci.), J. Gen. Chem. (U.S.S.R.) 17, 2149-57 (1947).—The previously reported prep. of EtO<sub>2</sub>OCH<sub>2</sub>PO(OEt)<sub>2</sub> from (HO<sub>2</sub>CC<sub>2</sub>H<sub>5</sub>Cl) and NaOP(OR)<sub>2</sub> in EtOH (C.A. 23, 4443) was repeated in view of results of Kosolapoff (C.A. 40, 4038) who obtained lower yields of the product in EtOH than in inert solvents. Na (11.5 g.) in 200 ml. abs. EtOH, treated with 68 g. (EtO)<sub>2</sub>POH dropwise, heated 2 hrs. on a steam bath, treated dropwise with stirring and cooling, with 63 g. CICH<sub>2</sub>CO<sub>2</sub>Et, boiled — 3 hrs. with charcoal, allowed to stand overnight, filtered, and distd., gave 90.1 g. (80.5%) EtO<sub>2</sub>CCl<sub>2</sub>PO(OEt)<sub>2</sub>, b.p. 141-3°. To 5.8 g. Na in EtOH was added 23.5 g. PhOH and the EtOH removed *in vacuo*, giving colorless dry PhONa, a white mass; this suspended in 200 ml. dry Et<sub>2</sub>O, was added 34.8 g. (EtO)<sub>2</sub>POH, followed by heating 1 hr. on a steam bath; the soln. was treated, with stirring and cooling, with 31 g. CICH<sub>2</sub>CO<sub>2</sub>Et, then boiled 3 hrs. with charcoal, allowed to stand overnight, filtered, and the filtrate distd., giving 31.8 g. (57%) EtO<sub>2</sub>CCl<sub>2</sub>PO(OR)<sub>2</sub>. The small drop in yield (57 instead of 50%) on the exchange of EtOH by PhOH in Et<sub>2</sub>O is cited as evidence of the rapid rate of reaction of (EtO)<sub>2</sub>PONa with the chloroformate, which explains the high yields obtained in this reaction when EtOH is used as the solvent. The reaction of CICH<sub>2</sub>CO<sub>2</sub>Et with RONa is a relatively slow one. Na (8.4 g.) in 175 ml. abs. EtOH and 34.5 g. CICH<sub>2</sub>CO<sub>2</sub>Et boiled 3 hrs. as above gave 19.3 g. (50%) Et ethoxycarbonate, b.p. 81-2°, d<sub>4</sub><sup>20</sup> 1.0304, n<sub>D</sub><sup>20</sup> 1.4020. A similar reaction using CICO<sub>2</sub>Et gave different results in EtOH, because in this case the acyl chloride reacted preferentially with RONa or EtOH and no phosphonoformic ester was formed at all; in petr. ether, however, 35% EtO<sub>2</sub>CPO(OEt)<sub>2</sub>, b.p. 130-1°.

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3 AND PROPERTIES INDEX  
WATER-SOLUBLE. The reaction in EtOH yielded as the only identifiable products (EtO)<sub>2</sub>POH and (EtO)<sub>2</sub>CO. The lack of phosphonation in this case is not due to alcoholysis of the phosphonoformate, as the latter is unchanged on boiling 6 hrs. with EtOH. Following the prep. of phosphonomalonate esters reported by Kosolapoff (see above), the following were prep'd. in good degree of purity: (MeO)<sub>2</sub>POCH(CO<sub>2</sub>Et)<sub>2</sub>, b.p. 153-1°, d<sub>4</sub><sup>20</sup> 1.232, n<sub>D</sub><sup>20</sup> 1.2184, n<sub>D</sub><sup>20</sup> 1.4535 (from 22.6 g. (MeO)<sub>2</sub>P treated slowly with 43.5 g. BrHCl(CO<sub>2</sub>Et)<sub>2</sub> and heated 1 hr. on steam bath), b.p. 154-5°, d<sub>4</sub><sup>20</sup> 1.1719, n<sub>D</sub><sup>20</sup> 1.4539, n<sub>D</sub><sup>20</sup> 1.4450 (from 10.0 g. (EtO)<sub>2</sub>P and 23.6 g. BrHCl(CO<sub>2</sub>Et)<sub>2</sub> on the steam bath), 76°, (PrO)<sub>2</sub>POCH(CO<sub>2</sub>Et)<sub>2</sub>, b.p. 169-70°, d<sub>4</sub><sup>20</sup> 1.1117, n<sub>D</sub><sup>20</sup> 1.4430 (from 21 g. (PrO)<sub>2</sub>P and 24 g. BrHCl(CO<sub>2</sub>Et)<sub>2</sub> heated 2 hrs. on a steam bath), 84.7°, (BuO)<sub>2</sub>POCH(CO<sub>2</sub>Et)<sub>2</sub>, b.p. 185-90° (substantial decompp.), n<sub>D</sub><sup>20</sup> 1.4405 (from 20 g. (BuO)<sub>2</sub>P and 20 g. BrHCl(CO<sub>2</sub>Et)<sub>2</sub> after 3 hrs. heating in a CO<sub>2</sub> atm.), 40% (mostly due to loss during distn.). Although phosphonomalonates apparently were formed on heating BrHCl(CO<sub>2</sub>Et)<sub>2</sub> with (iso-BuO)<sub>2</sub>P or PhP(OPr)<sub>2</sub>, the products could not be isolated because of decompp. on attempted distn. When 27.5 g. I was treated with 1.8 g. Na in 150 ml. Et<sub>2</sub>O a brisk reaction ensued and the Na deriv. was formed in soln.; treatment with MeI, however, gave not the expected Me deriv. of I, but MePO(OEt)<sub>2</sub>, b.p. 80.5-1°, d<sub>4</sub><sup>20</sup> 1.0725, n<sub>D</sub><sup>20</sup> 1.4002. Similarly, (PrO)<sub>2</sub>POCH(CO<sub>2</sub>Et)<sub>2</sub> gave MePO(OPr)<sub>2</sub>, b.p. 89-70°, b.p. 105-6°, d<sub>4</sub><sup>20</sup> 1.0689, n<sub>D</sub><sup>20</sup> 1.4082. This result is interpreted by a possibility of tautomerism of the Na deriv. in which is formed an enolic PONa compd. which adds MeI across the enolic double bond and the adduct breaks to give MePO(OR)<sub>2</sub>. The phosphonomalonate esters were yellow liquids which on hydrolysis with HCl gave inorg. P acids and malonic acid only, thus confirming the earlier work of K. G. M. K.

PA 15T85

KAMAY, G.

USSR/Chemistry - Alkylation  
Chemistry - Arsenious acid

Mar 1947

"Some Alkylated Ethers of Arsenious Acid," G. Kamay,  
3 pp

"Zhur Obshch Khim" Vol XVII, No 3

Investigation of new representatives of arsenious  
acid ethers, obtaining, for the first time, isopropyl  
and allyl ethers of arsenious acid.

15T85

KAMAY, GIL'M

USSR/Chemistry - Carbon Tetrachloride  
Chemistry - Phosphinic Acids

Jan 1947

"The Effect of Carbon Tetrachloride on Ester Phosphite  
and Phenylphosphinic Acid," Gil'm Kamay, 3 pp.

"Dok Ak Nauk SSSR" Vol LV; No 3

Submitted by A. B. Arbuzov, Institute of Chemistry,  
Kazan Branch, Academy of Sciences of the USSR. Ex-  
periments were conducted to determine the interaction  
between chlorine and bromine ethyl and hopyl on the  
middle esters and salts of oxidized ester phosphite  
acid. O. N. Belorosson and L. P. Egorov assisted on the  
experimental part.

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KAMAY, Gil'm

Methods for producing diphenylamine. Trudy KKHTI no.11:54-56 47.  
(Diphenylamine) (MIRA 12:11)

KAMAY, GIL'M

PA 69T15

Uspek/Chemistry - Organic Compounds Mar 1948  
Chemistry - Synthesis

"Action of Carbon Tetrachloride and Other Polyhalides of Paraffins on Alkylene Esters of Phenylphosphonic Acid," Gil'm Kamay, Lab Tech of Org. Synthesis, Kazan Chem. Tech Inst imeni S. M. Kirov, 5 pp.

"Zhur. Obshch. Khim." Vol XVIII (LXXX), No 3

Establishes that trichlorbromomethane reacts with ethyl esters of phenylphosphoric acid. As a result of reaction bromine esters are released and there is a formation of ethyl esters of phenyltrichlormethyl-phosphoric acid. Submitted 10 Mar 1947.

69T15

KAMAY, Gil'm; BANKOVSKIY, R.K., student

Diisooamylphosphonoacetic and d-diisoamylphosphonopropionic esters  
and some of their derivatives. Trudy KKHTI no.14:75-80 '49.  
(MIRA 12:11)

1. Laboratoriya tekhnologii organicheskogo sinteza Kazanskogo  
khimiko-tehnologicheskogo instituta im. S.M. Kirova.  
(Phosphonic acids)

CA

13

Action of carbon tetrachloride on esters of *p*-methoxybenzene phosphorous and diphenylphosphinous acids  
Gill'm Kamal, Doklady Akad. Nauk S.S.R. 66, 389 (2)  
(1949); cf. C.A. 41, 6512g.  $\text{CCl}_4$  with  $p$ -Me $\text{C}_6\text{H}_4\text{P}(\text{O})\text{OR}_2$  readily yields the following esters of  $p$ -Me $\text{C}_6\text{H}_4\text{P}(\text{O})\text{Cl}$ :  
 $\text{PO}_2\text{H}_2$ ,  $\text{Me}$ , b.p. 125-30°, d<sub>4</sub> 1.2228, n<sub>D</sub><sup>20</sup> 1.5312;  $\text{Et}$ ,  
b.p. 157-8°, d<sub>4</sub> 1.3220, n<sub>D</sub><sup>20</sup> 1.5423;  $\text{Pr}$ , b.p. 168-70°, d<sub>4</sub>  
1.3094, n<sub>D</sub><sup>20</sup> 1.5320;  $\text{Bu}$ , b.p. 180-1°, d<sub>4</sub> 1.2303, n<sub>D</sub><sup>20</sup> 1.5207;  
 $t\text{-Bu}$ , b.p. 178-80°, d<sub>4</sub> 1.2061, n<sub>D</sub><sup>20</sup> 1.5204. Hydrolysis of these by HCl gave cryst. free acid, which on prolonged heating in  $\text{H}_2\text{O}$  gave  $\text{MeC}_6\text{H}_4\text{PO}(\text{OH})_2$ . A similar reaction of  $\text{CCl}_4$  on prolonged heating with  $(\text{CH}_3)_2\text{CHCHRO}_2\text{P}(\text{O})$  gave the corresponding ester  $(\text{CH}_3)_2\text{CHCHRO}_2\text{P}(\text{O})\text{CCl}_4$  (not characterized). Addn. of 20 g.  $p$ -MeOC $\text{C}_6\text{H}_4\text{PCl}_2$  to 9 g. EtOH and 23.2 g. PhNMe<sub>2</sub> in Et<sub>2</sub>O gave  $p$ -Me $\text{C}_6\text{H}_4\text{P}(\text{O})\text{Et}_2$ , b.p. 138-8°, d<sub>4</sub> 1.0520, n<sub>D</sub><sup>20</sup> 1.0133, n<sub>D</sub><sup>20</sup> 1.4980. This (10 g.), refluxed 6 hrs. with 0.7 g.  $\text{CCl}_4$  gave  $(p$ -MeOC $\text{C}_6\text{H}_4)(\text{CH}_3)\text{P}(\text{O})\text{Et}_2$ , b.p. 145-7°, d<sub>4</sub> 1.2815, d<sub>4</sub>  
1.2050, n<sub>D</sub><sup>20</sup> 1.5008. Ph $\text{POEt}_2$  (b.p. 170-7°; from Ph $\text{PCl}_3$  and EtOH with PhNMe<sub>2</sub>) (5 g.) in 30 ml. Et<sub>2</sub>O was treated dropwise with 4.5 g.  $\text{CCl}_4$ ; the vigorous reaction gave upon evapn.  $\text{Ph}_2\text{P}(\text{O})\text{CH}_3$ , m. 138.9° (from EtOH). Similarly, Ph $\text{POCHMe}_2$  gave the same phosphine oxide with  $\text{CCl}_4$ .  $\text{CCl}_4$  did not react with  $(\text{PhO})_2\text{P}$  (b.p. 218-19°, d. 1.2070, n<sub>D</sub><sup>20</sup> 1.5021),  $\text{EtP}(\text{OPh})_2$  (b.p. 223-5°, d. 1.1923, n<sub>D</sub><sup>20</sup> 1.5912), or  $\text{PhP}(\text{OPh})_2$  (b.p. 230°, d. 1.1649, n<sub>D</sub><sup>20</sup> 1.6101) when heated, even for several hrs. to 160°. G. M. K.

KAMAY, GIL' M; KHISAMOVA, Z.L.

Trichlormethylparatolylphosphinic acid and its derivatives.  
Izv.Kazan.fil.AN SSSR Ser.khim.nauk no.1:59-61 '50.  
(MIRA 10:5)  
(Phosphinic acids)

C A

**Esters of cacodylphosphonic acid.** H. G. Kamal and O. N. Belyaeva [Arzneov Chem. Inst.,<sup>a</sup> Kazan]. *Izvest. Akad. Nauk S.S.R., Otdel. Khim. Nauk*, 1950, 108, 202; cf. *C.A.*, 42, 1121f.—Compds. of the type  $R_2AsP(O)(OR)_2$ , prep'd. from haloarsines and  $(RO)_2PONa$ , are liquids distillable in vacuo, which possess a cacodylic odor and suffer degradation to alkyl halides,  $R_2PO_3$ , and secondary arsine oxides on hydrolysis with HCl. Standing in air results in cleavage of the As-P link, apparently with formation of  $(R_2As)_2O$  and  $(RO)_2PO_3O_2P(OR)_2$ ; the lower members are particularly sensitive to such oxidation. Addn. of 100.5 g. EtAsI to 115 ml. 10 N NaOH and 150 ml. 95% EtOH, followed by addn. of 61 g. iso-BuBr and refluxing 6 hrs., gave 69.8%  $R((\text{iso-Bu})_2As)_2$ ,  $b_p$  103-4°,  $d_4^{20}$  1.7417,  $d_4^{\text{25}}$  1.7639. This (28 g.) refluxed 3 hrs. with (BuO)<sub>2</sub>PONa (from 2.08 g. Na and 17.0 g. (BuO)<sub>2</sub>POH in Et<sub>2</sub>O) and the NaI filtered off gave 54%  $\text{bis}(\text{iso-Bu})_2Et_2P(O)(OBu)_2$ ,  $b_p$  138.5-40°,  $d_4^{20}$  1.1208,  $d_4^{\text{25}}$  1.1087,  $n_D^{20}$  1.4738. (BuO)<sub>2</sub>PONa (from 3.2 g. Na and 28.6 g. (BuO)<sub>2</sub>POH in Et<sub>2</sub>O) with 33 g. MeEt<sub>2</sub>AsI similarly gave 56%  $\text{MeEt}_2AsP(O)(OBu)_2$ ,  $b_p$  127°,  $d_4^{20}$  1.0884,  $d_4^{\text{25}}$  1.0710 (air oxidation yields (EtMeAs)<sub>2</sub>O); bubbling of air for 3 hrs. through the substance gave a liquid,  $b_p$  73-4°.

and an undistillable residue of  $(\text{MeEtAs})_2O$  (cf. Wigren, *C.A.*, 24, 3086). Similarly, (iso-PrO)<sub>2</sub>PONa gave a poor yield of  $\text{MeEt}_2AsP(O)(OC_2H_5)_2$ ,  $b_p$  90.0-0.5°,  $b_p$  110-12°,  $d_4^{20}$  1.1002,  $d_4^{\text{25}}$  1.1733,  $n_D^{20}$  1.4761; EtBuAsI gave 52%  $\text{EtBu}_2AsP(O)(OBu)_2$ ,  $b_p$  116-7°,  $d_4^{20}$  1.1220,  $d_4^{\text{25}}$  1.1048,  $n_D^{20}$  1.4775; 50%  $\text{EtPh}_2AsP(O)(OPr)_2$ ,  $b_p$  105.6°,  $d_4^{20}$  1.2020,  $d_4^{\text{25}}$  1.2427,  $n_D^{20}$  1.5375, was obtained similarly, as was 60.7%  $\text{EtPh}_2AsP(O)(OBu)_2$ ,  $b_p$  176.6-5°,  $d_4^{20}$  1.2031,  $d_4^{\text{25}}$  1.1875,  $n_D^{20}$  1.5304 (air oxidation or hydrolysis by boiling 6 hrs. with concd. HCl gave *bis(ethylphenylarsinyl oxide*,  $b_p$  188-9°).

G. M. Kosolapoff

CA

Action of carbon tetrachloride on esters of *p*-toluenephosphorous acid. Z. I. Khisanova and G. M. Kursapoff (A. B. Arbuzov Chem. Inst., Kuzan), Zhur. Obshch. Khim. (USSR) 20, 1102-70 (1950); cf. C.A. 41, 5882g; 42, 7724f. Esters of the type  $R'P(O)R''_2$  ( $R = p$ -Me<sub>2</sub>C<sub>6</sub>H<sub>4</sub>;  $R' = R'' = \text{CH}_3$ ) were converted to  $R'Cl_2P(O)OR''$  by the action of  $CCl_4$ .  $R'P(O)R''_2$  (42 g., 42.12861, d<sub>4</sub> 1.2006, m.p. 1.585°, n<sub>D</sub> 1.6427, w<sub>D</sub> 1.4125) added slowly to 13.6 g. MeOH and 50.2 g. MeNPh in 100 ml. H<sub>2</sub>O, refluxed 30 min., let stand overnight, and filtered, gave 50%  $R'P(O)OMe$ , b.p. 107-9°, d<sub>4</sub> 1.0709, d<sub>4</sub> 1.0427, w<sub>D</sub> 1.4125; which reacts with CuX<sub>2</sub> addn. of 8.4 g. Mel to 9 g. ester gave 100%  $R'MeP(O)OMe$ , b.p. 151-2°, d<sub>4</sub> 1.1313, d<sub>4</sub> 1.1301, w<sub>D</sub> 1.4288; this boiled with concd. HCl 3 hrs. and exapd. gave  $R'MeP(O)OH$ , m.p. 119.2° [cf. Michaelis, Ber. 31, 1000 (1898)]. Addn. of 12 g. phosphonite to 0.5 g.  $CCl_4$  caused a vigorous reaction yielding 100% MeCl and  $R'(C_6H_5)P(O)OMe$ , b.p. 128.3°, d<sub>4</sub> 1.2328, d<sub>4</sub> 1.2140, w<sub>D</sub> 1.4312. Similarly, H<sub>2</sub>O<sub>2</sub> gave 60%  $R'P(O)O_2$ , b.p. 121.5°, d<sub>4</sub> 1.0680, d<sub>4</sub> 1.0210, m.p. 1.5138, d<sub>4</sub> 1.0810, d<sub>4</sub> 1.0697, w<sub>D</sub> 1.4105, while addn. of 8 g.  $CCl_4$  to 11 g. phosphonite followed by refluxing 2 hrs. gave  $R'(C_6H_5)P(O)Cl$ , b.p. 137°, d<sub>4</sub> 1.3260, d<sub>4</sub> 1.3103, w<sub>D</sub> 1.4128.

(1 g.) and 12 ml. concd. HCl refluxed 2 hrs., then repeatedly exapd. with  $H_2O$ , yielded  $R'Cl_2P(O)OH$ , m.p. 1.41-5.6° (from Et<sub>2</sub>O), sol. in EtOH and Et<sub>2</sub>O. A reaction sequence as above with  $POH$  gave 81.9%  $R'(PO)_3$  b.p. 120-30°, d<sub>4</sub> 1.0011, d<sub>4</sub> 0.9612, w<sub>D</sub> 1.5010, which boiled 3 hrs. with Mel gave 92%  $R'MeP(O)O_2$ , b.p. 107°, d<sub>4</sub> 1.0889, d<sub>4</sub> 1.0511, w<sub>D</sub> 1.5185 (its hydrolysis gave  $R'MePO(OH)$ , as described above), while 10 g.  $CCl_4$  with 15 g. phosphonite gave 12 g.  $R'Cl_2P(O)OH$ , b.p. 109.7°, d<sub>4</sub> 1.0994, d<sub>4</sub> 1.0911, w<sub>D</sub> 1.5150 (hydrolysis with concd. HCl gave the free acid, m.p. 181°, as above). BuOH, as above, yielded 89.3%  $R'(OBu)_3$ , b.p. 170.1°, d<sub>4</sub> 0.9899, d<sub>4</sub> 0.9776, w<sub>D</sub> 1.5024, which heated with Mel gave 90%  $R'MeP(O)O_2$ , b.p. 117.5°, d<sub>4</sub> 1.0722, d<sub>4</sub> 1.0583, w<sub>D</sub> 1.5002, while  $CCl_4$  gave  $R'(Cl)P(O)OH$ , b.p. 180.1°, d<sub>4</sub> 1.2033, d<sub>4</sub> 1.2113, w<sub>D</sub> 1.5267. Similarly, 10-BuOH yielded 77%  $R'P(OBu)_2$ , b.p. 153.6°, d<sub>4</sub> 0.9587, d<sub>4</sub> 0.9007, w<sub>D</sub> 1.4987; this (10 g.) and 0.2 g.  $CCl_4$  reacted with heat evolution, yielding almost 100% iso-BuCl and 38%  $R'(C_6H_5)P(O)OBu$ , b.p. 178.8°, d<sub>4</sub> 1.2661, d<sub>4</sub> 1.2230, w<sub>D</sub> 1.5291. Continued hydrolysis of  $R'Cl_2P(O)OH$  eventually leads to the formation of  $R'PO(OH)_2$ . (It may be noted that the consts. of the initial ArPCl<sub>3</sub> differ from the properties indicated by Michaelis and Panek, loc. cit. 212, 213, 1982, although the M. and P. procedure was used for the prep.)

G. M. Kursapoff

CA

*1*  $\alpha,\alpha',\alpha''$ -Trivinyltrialkyl esters of phosphorous acid.  
N. A. Chadaeva and Gil'm Kurnal (S. M. Kirov Chem. Technol. Inst., Kazan). *Zhur. Obshchey Khim.* (J. Gen. Chem.) 20, 1487-92 (1950).—Reactions of  $RMgBr$  with acrolein were used to secure vinylalkylcarbinols,  $RCH(OH)CH=CH_2$ .

$CH_2CH_2$ , R = Me (I), b. 90-7°,  $d_4^{25}$  0.8894,  $n_D^2$  1.4139;  $Ez$  (II), b. 112-16°,  $d_4^{25}$  0.8400;  $Pz$  (III), b<sub>1</sub> 49-51°,  $d_4^{25}$  0.8903,  $n_D^2$  1.4230;  $Bw$  (IV), b<sub>1</sub> 43-4°,  $d_4^{25}$  0.8384,  $n_D^2$  1.4343;  $Pk$  (V), b<sub>1</sub> 101-2°,  $d_4^{25}$  1.0251, m 1.5400. To 27 g. I, 45.5 g. PhNMe<sub>2</sub>, and 100 ml. dry Et<sub>2</sub>O was added with a cooling and stirring 17.2 g. PCl<sub>3</sub>; after stirring 0.5 hr. without further cooling, and filtration, the filtrate yielded 15 g. ( $CH_2CHCH_2O_2P$ )<sub>3</sub> b<sub>1</sub> 91-3°,  $d_4^{25}$  0.9357,  $n_D^2$  1.4331, which reacts with CuN, MeI, and CCl<sub>4</sub> (the latter yields  $MeCH_2CH_2CH_2O_2P$ ); addn. of 15 g. Br to 8 g. ester in Et<sub>2</sub>O gave *1,2,3*-tribromobutane, b<sub>1</sub> 113-14°. Similarly II with PhNEt<sub>2</sub> gave 84% ( $CH_2CHCH_2O_2P$ )<sub>3</sub> b<sub>1</sub> 123-4°, b<sub>2</sub> 102-3°,  $d_4^{25}$  0.9467,  $n_D^2$  1.4521; its reaction with MeI or CCl<sub>4</sub> gave undistillable products; bromination, as above, b<sub>1</sub> gave *1,2,3*-tribromopentane, b<sub>2</sub> 118-20°,  $d_4^{25}$  2.0213,  $n_D^2$  1.5540. III similarly gave ( $CH_2CH_2O_2P$ )<sub>3</sub> b<sub>1</sub> 137-9°,  $d_4^{25}$  0.9365,  $n_D^2$  1.4319. IV gave 93% ( $CH_2CHCH_2O_2P$ )<sub>3</sub> b<sub>1</sub> 155-7°,  $d_4^{25}$  0.9407,  $d_4^{25}$  0.0230,  $n_D^2$  1.4521; reaction with CCl<sub>4</sub> gave 3-chloroepicene, b. 104-7°,  $d_4^{25}$  0.9484,  $d_4^{25}$  0.0284,  $n_D^2$  1.4501, while bromination gave *1,2,3*-tribromohexane, b<sub>1</sub> 136-8°,  $d_4^{25}$  1.7805,  $d_4^{25}$  1.7510,  $n_D^2$  1.5301. V with PCl<sub>3</sub>, as above gave an oil which could not be distd., as at 60° it polymerized rapidly to a solid; apparently ( $CH_2CH_2O_2P$ )<sub>3</sub> was formed, since bromination of the original oil gave (*1,2,3*-tribromopropyl)benzene, m. 123-4°.

G. M. Kosolapoff

CA

Action of carbon tetrachloride on alkyl esters of pyrophosphorous acid. Gil'm Kamal (A. R. Adyaray Chem. Inst., Karan), Doklady Akad. Nauk S.S.R., 70, 241 (1950); cl. 41, 5803g; 44, 127e.—Esters of pyrophosphorous acid react with  $CCl_4$  in 2 ways; 1 mode cleaves the POP link, forming  $CH_2CP(OEt)_3$  and  $(RO)_2POCl$ , the 2nd yielding  $CH_2CP(OEt)_3$  and  $(RO)_2POCl$ . Apparently the cleavage of the POP bond by the Cl fragment may occur on either side of the pyro O atom. Warming (11.0 g.  $CCl_4$  and  $Na$  in  $(RO)_2PO(OEt)_2$ , bu 100-7°, w $\ddot{\circ}$  1.4338, 2 hrs. on steam bath (heating interrupted until subsidence of the initial action) leads to no loss of wt. and distill. yields unstated amts. of the following products:  $(EtO)_2POCl$ , bu 40-51°,  $(RO)_2POCl$ , bu 88-9°, and 7.0 g.  $CH_2CP(OEt)_3$ , bu 122-3.5°, d $\ddot{\circ}$  1.3851, d $\ddot{\circ}$  1.3016, w $\ddot{\circ}$  1.4589. Since the reaction was run in a  $CO_2$  atm., the formation of chlorophosphate could not be ascribed to oxidation of the phosphate. Similarly, 18 g.  $CCl_4$  and 31 g.  $(PrO)_2PO(OEt)_2$ , bu 147-8°, w $\ddot{\circ}$  1.4305, gave after 3 hrs. unstated amts. of  $(PrO)_2POCl$ , bu 98-70°, w $\ddot{\circ}$  1.4400,  $(PrO)_2POCl$ , bu 108-7°, and  $CH_2CP(OEt)_3$ , bu 144-5°, d $\ddot{\circ}$  1.2025, d $\ddot{\circ}$  1.2151, w $\ddot{\circ}$  1.1501. Similarly 1 hrs. heating of 25 g.  $CCl_4$  and 40 g.  $(BuO)_2PO(OEt)_2$ , bu 183-5°, w $\ddot{\circ}$  1.4448, gave some crude  $(BuO)_2POCl$ , bu 85-110°, and  $CH_2CP(OBu)_3$ , bu 151-2°, w $\ddot{\circ}$  1.4523. (G. M. Kosolapoff)

Translation W-23324, 18 Jul 52

C.A.

13

**Alkyl esters of phosphonocarboxylic acids.** Giliu Kamal and E. I. Shugurova (S. M. Kirov Chem.-Technol. Inst., Karag., Dakhlyy Akad. Nauk N.N.S.R.), **72**, 701-4 (1980). Reaction of esters of halogen-substituted aliphatic acids with either  $(RO)_2P$  or  $(RO)_2PONa$  was used to prepare the following esters (there is no indication as to which method was used to obtain the yields given in parentheses):  $(RO)_2P(O)CO_2Et$  (R given); *Me* (no yield given)  $b_7$ -8°,  $d_2^*$  1.014; *Pr* (no yield given)  $b_7$ -8°,  $d_2^*$  1.0702,  $n_D^{20}$  1.4185; *Pr* (45.2%),  $b_7$  143.5-4.5°,  $d_2^*$  1.0989,  $n_D^{20}$  1.4241; *Bu* (41.5%),  $b_7$  161-2°,  $d_2^*$  1.0569,  $n_D^{20}$  1.4331; *iso-Am* (47.7%),  $b_7$  100- $b_7$  161-2°,  $d_2^*$  1.0369,  $n_D^{20}$  1.4326;  $(RO)_2P(O)CH_2CO_2Et$ ; *Me* -70°,  $d_2^*$  1.0312,  $n_D^{20}$  1.4326; *(RO)\_2P(O)CH\_2CO\_2Et*; *Me* (45%),  $b_7$  134.5-5.0°,  $d_2^*$  1.2033,  $n_D^{20}$  1.4302; *iso-Pr* (49%),  $b_7$  142-3°,  $d_2^*$  1.0770,  $n_D^{20}$  1.4285; *Pr* (58.3%),  $b_7$  155.5-0.0°,  $d_2^*$  1.0821,  $n_D^{20}$  1.4202; *Bu* (49.2%),  $b_7$  170.5-7.0°,  $d_2^*$  1.05- $d_2^*$  1.4335; *iso-Am* (47.0%),  $b_7$  170-80°,  $d_2^*$  1.0254,  $n_D^{20}$  1.4371;  $(RO)_2P(O)CH_2CO_2Et$ ; *iso-Pr* (49.0%),  $b_7$  134.5-5.5°,  $d_2^*$  1.0440,  $n_D^{20}$  1.4238; *iso-Bu* (53.1%),  $b_7$  101.5-8.5°,  $d_2^*$  1.0880,  $n_D^{20}$  1.4331; *iso-Am* (38.4%),  $b_7$  181-2°,  $d_2^*$  1.0011,  $n_D^{20}$  1.4380;  $(RO)_2P(O)CM_2CO_2Et$ ; *iso-Pr* (49.1%),  $b_7$  134-5°,  $d_2^*$  1.0107,  $n_D^{20}$  1.4258; *iso-Bu* (35.9%),  $b_7$  100-1°,  $d_2^*$  1.0211,  $n_D^{20}$  1.4332. All but the 1st compd. yielded the corresponding free acids (undescribed procedure

or results) on hydrolysis. Allyl alk. with  $PCl_3$  yielded *diethyl phosphite*,  $b_7$  97.5-8.5°,  $d_2^*$  1.1001,  $d_2^*$  1.0793,  $n_D^{20}$  1.4430, which easily adds Br and reacts with Na, yielding the *Na deriv.* which with esters of halogenated acids yielded  $(C_2H_5O)_2P(O)CO_2Et$  (33.5%),  $b_7$  153-4°,  $d_2^*$  1.11300,  $n_D^{20}$  1.4400, and  $(C_2H_5O)_2P(O)CH_2CO_2Et$  (30.1%),  $b_7$  135.5-6.5°,  $d_2^*$  1.1384,  $n_D^{20}$  1.4514; the above results were obtained only if  $Et_2O$  was used as the solvent; use of  $EtOH$  in both instances gave no phosphonates and only  $(EtO)_2CO$  and  $EtOCH_2CO_2Et$ , resp., were isolated, while the diethyl phosphite was recovered. This result is explained by the equil. shift in the system:  $(RO)_2POH + EtONa \rightleftharpoons (RO)_2PONa + EtOH$  in the presence of much  $EtOH$  (cf. Kosolapoff, *C.A.* **40**, 4058). The above phosphonocarboxylates with  $PhNH_2$  or *p-MeC\_6H\_4NH\_2* and also  $NH_3$  gave largely the corresponding *amides* at the C atom only. G. M. K.

CA

Dipole moments of some tertiary arsines. K. I. Kut'min and Gilm' Kamal (S. M. Kirov Chem.-Technol. Inst., Krasn.). *Doklady Akad. Nauk S.S.R.* 73, 709-10 (1950). From dielec.-const. measurements in dil. soln. in  $C_6H_6$  at  $20^\circ$ , the dipole moments  $\mu = 0.0127 \times 10^{-16}$   $\sqrt{(P_m - M/K_p)}$ , with the mol. polarization  $P_m$  obtained by graphic extrapolation, the electronic polarization taken equal to the mol. refraction, and the st. polarization not taken into account, were dedd. to: Et<sub>2</sub>As 1.04; Pr<sub>2</sub>As 1.01; Bu<sub>2</sub>As 0.99; (*p*-McC<sub>6</sub>H<sub>5</sub>)<sub>2</sub>As 1.74; EtBu(*p*-McC<sub>6</sub>H<sub>5</sub>)As (I) 1.29. The bond moment As-C (aromatic), calcd. from  $\mu$  of Ph<sub>3</sub>As, is 0.69, with the angle C-As-C =  $60^\circ$ , as dedd. by electron diffraction. The vector sum of bond moments for (*p*-McC<sub>6</sub>H<sub>5</sub>)<sub>2</sub>As, with the As-C bond moments pointing from the ring to the As, is calcd. to 1.08, i.e. close to the exptl. 1.74. The calcd.  $\mu$  for I, 1.23, is also close to the exptl. 1.29. The new compd. I, synthesized from BuMgBr and Et(*p*-McC<sub>6</sub>H<sub>5</sub>)As in abs. ether, has the consts.  $b_1$  182.4°,  $d_1^b$  1.0901,  $w_1$  1.5390. N. Thon

GIL'M KAMAT, CHADAYEVA, N. A.

Anhydrides

Cyclic acid chlorides and mixed esters of propylene-glycol arsenide. Dokl,  
AN, SSSR, 8, No. 5, 1951. Khimicheskiy Institut im. A. Ye. Arbuzova;  
Kazanskogo Filiala Akademii Nauk SSSR

Monthly List of Russian Accessions, Library of Congress, May 1952, UNCLASSIFIED.  
Red. 29 March 1951

KAMAY, GIL'M

UESR/Chemistry - Organophosphorus Compounds Apr 51

"Diallylphosphorous Acid and Its Derivatives," Ye. I. Shugurova, GIl'm Kamay, Lab of Tech of Org Synthesis, Kazan' Chemicotech Inst imeni S. M. Kirov "Zhur Obshch Khim" Vol XXI, No 4, pp 658-662

Synthesized and studied for 1st time diallylphosphorous acid, 1st rep of unsaturated esters of phosphorous acid, 1st rep of unsaturated esters of phosphorous acid. Obtained diallylphosphono acetic acid ester acid ester and diallylphosphorous by interaction of Na deriv of diallylphosphorous

182T18

UESR/Chemistry - Organophosphorus Compounds (Contd) Apr 51

acid with corr esters of chloro-carbonic or chloroacetic acid. Proposes hypothesis for formation of diethylcarbonate and ethoxyacetic ester when above syntheses are carried out in alc.

182T18

KAMAY GIL'M

PA 194T65

USSR/Chemistry - Organophosphorus Compounds

Dec 51

"Certain New Phosphonocarboxylic Esters and Their Derivatives," Gil'm Kamay, E. Sh. Bastanov, Lab of Technol of Org Synthesis, Kazan' Chemicotech Inst imeni S. M. Kirov

"Zhur Obshch Khim" Vol XXI, No 12, pp 2188-2193

Synthesized and studied Et esters of  $\alpha$ -dialkyl-phosphono-propionic, isobutyric, and malonic acids. Interaction of aniline or *p*-toluidine with above esters yielded corresponding arylamides of phosphonocarboxylic acids. Studied their

USSR/Chemistry - Organophosphorus Compounds (Contd)

Dec 51

properties. Found that action of alc NH<sub>3</sub> on phosphonomalonic ester breaks P-C bond, yielding amide of malonic acid.

194T65

KAMAY, Gil'm

## USSR/Chemistry - Organic Arsenic Compounds

1 Feb 51

"Synthesis and Properties of Some Cyclic Esters of Ethyleneglycolarsenous Acid," Gil'm Kamay, Z. L. Khisamova, Chem Inst. imeni A. Ye. Arbuzov, Kazan' Affiliate, Acad Sci USSR

"Dok Ak Nauk SSSR" ~~Vol 1951~~, No 4, pp 535-538  
76

By reacting ethylene glycol with arsenic trichloride in presence of pyridine, synthesized chloride of ethyleneglycolarsenous acid (bp 71-72° at 11 mm, mp 144-45°). Prep number of triesters of arsenous acid from this cyclic diester monochloride. The bp of alkyl esters of ethyleneglycolarsenous acid lie very close to those of the analogous P compd: In the case of Me and Et esters of either ethyleneglycolarsenous acid or ethyleneglycolphosphorous acid, they are in the neighborhood of 50-60° at 11-23 mm. Prep triester  $\text{As}_2(-\text{OCH}_2\text{CH}_2\text{O}-)_3$ . By oxidizing latter with bromine, obtained penta-

178T17

KAMAY, GIT.'M

USSR/Chemistry - Organophosphorus  
Compounds

1 Aug 51

"Amides of Dialkylphosphonocarboxylic Acids and  
Their Derivatives," Gil'm Kamay, Ye. I. Shugurov,  
Kazan, Chem-Tech Inst imeni S. M. Kirov

"Dok Ak Nauk SSSR" Vol LXXIX, No 4, pp 605-607

Prepd alkyl esters of phosphonocarboxylic acids (I)  
as described in "Dok Ak Nauk SSSR" Vol LXXII, 1950,  
p 301. Reacted them with ammonia according to P.  
Milen to prep amides. In some cases, obtained  
amides of dialkylphosphonoacetic acid by reacting

211T28

trialkylphosphites with monochloroacetamide. Re-  
acted I with aniline or p-toluidine to obtain N-  
aryl amides. Lists melting points of 7 dialkyl-  
phosphonoformamides and the corresponding acetamides  
as well as of 8 monophenylamides of dialkylphos-  
phonoacetic and propionic acids and the correspond-  
ing monoalkylamides. Describes monoarylamides  
of phosphonomalonic acids which were obtained as  
by-products and their behavior on treatment with  
alcoholic ammonia (fission of P-C bond).

211T28

**USSR/Chemistry - Organophosphorus Compounds**

11 Aug 51

"The Action of Haloforms on Alkyl Esters of Phosphorous Acid," Gil'ın Kamy, Kazan, Chem-Tech Inst. imeni S. M. Kirov

"Dok Ak Nauk SSSR" Vol LXXIX, No 5, pp 795-798  
 Trimethyl phosphite reacts with  $\text{CCl}_4$  forming trimethylphosphinic acid (I) dimethyl ester (Arbuzov reaction) and in addn to that dimethyl-phosphoric acid chloride. Triethylphosphite on reacting with  $\text{CCl}_3\text{Br}$  forms diethyl ester of I, but on reacting with  $\text{CCl}_3\text{F}$  forms diethyl ester

210723

**USSR/Chemistry - Organophosphorus Compounds (Contd)**

11 Aug 51

of the monofluorodichloromethyl analogue of I. Reaction of trialkyl phosphites (II) with  $\text{CHBr}_3$  yields dibromomethylphosphinic esters, but also a small quantity of dialkylphosphoric acid bromide. The reaction with  $\text{CHCl}_3$  is similar. Chloro-picrin reacts energetically with II, the only products isolated being dialkylphosphoric acid chlorides. Perchloromethylmercaptan also reacts energetically with II, but no products could be isolated.

210723

USSR/Chemistry - Arsenic Compounds

11 Dec 51

"Cyclic Acid Chlorides and Esters of Propyleneglycolarsenous Acids," Gil'm Kamay, N. A. Chadyeva, Chem Inst imeni A. E. Arbuzova, Kazan' Affiliate, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXXI, No 5, pp 837-840

Synthesized 6 new chlorides of propyleneglycolarsenous acids, which are sol in many org solvents, but hydrolyze in water to form white arsenic trioxide. Synthesized the alphanmethoxypropyleneglycolarsenous col ester of alpha-methoxypropyleneglycolarsenous acid, which upon heating with arsenic trioxide.

210740

USSR/Chemistry - Arsenic Compounds  
(Contd)

11 Dec 51

yielded the cyclic chloride of alpha-methoxypropyleneglycolarsenous acid. The chloride of alpha-methoxypropyleneglycolarsenous acid was also reacted with a series of abs alcs and 4 of the corresponding esters obtained.

210740

KAMAY, Gil'm

KAMAY, Gil'm

Chemical Abst.  
Vol. 48 No. 8  
Apr. 25, 1954  
Organic Chemistry

Preparation of cyclic chlorides and mixed esters of  $\alpha$ -alkoxypropylene glycol arsenous and trimethylene glycol arsenous acids. Gil'm Kamal and N. A' Chadaeva. Bull. acad. sci. U.S.S.R., Classe sci. chim. 1952, 807-11 (Engl. translation). See C.A. 47, 10470c.

H. L. H.

KAMAL, GIL'M

Chemical Abst.  
Vol. 48 No. 8  
Apr. 25, 1954  
Organic Chemistry

3  
①  
Dechlorination of hexachloroethane by alkyl esters of  
phosphorous acid. Gil'm Kamal. Bull. acad. sci.  
U.S.S.R., Classe sci. chim. 1952, 810-20 (Engl. translation).  
See C.A. 47, 10401a.

H. L. H.

MT

4-5-54

KAMAY, GILL'M; CHADAYEVA, N.A.

Preparation of cyclic chlorides and mixed esters of  $\alpha$ -alkoxypropylene glycol arsenous and trimethylene glycol arsenous acids. Izvest. Akad. Nauk S.S.R. Otdel. Khim. Nauk '52, 908-15. (MLEA 5:11)  
(CA 47 no.20:10470 '53)

1. A.E.Arbusov Chem. Inst., Kazan.

KAMAY, Gil'm.

Dechlorination of hexachloroethane by alkyl esters of phosphorous acid.  
Izvest. Akad. Nauk S.S.R., Otdel. Khim. Nauk '52, 923-5. (MLRA 5:11)  
(CA 47 no.20:10461 '53)

1. S.M.Kirov Chem.-Technol. Inst., Kazan.

KAMAY, Gil'm; KUZ'MIN, K.I.

Producing some esters of arsenic acid. Trudy EKHTI no.17:7-10  
'52 [publ. '53]. (MIRA 12:11)  
(Arsenic acid)

KAMAY, G. and KOSHKINA, E. S.

"Nitro- and Chloro-Derivatives of Triphenylphosphate and Triphenylphosphite,"  
Trudy Kazansk Khim. Tekh. Inst. im. S. M. Kirov, No.17, pp. 11-20, 1952

Evaluation B 3,075,646

Translation in Library

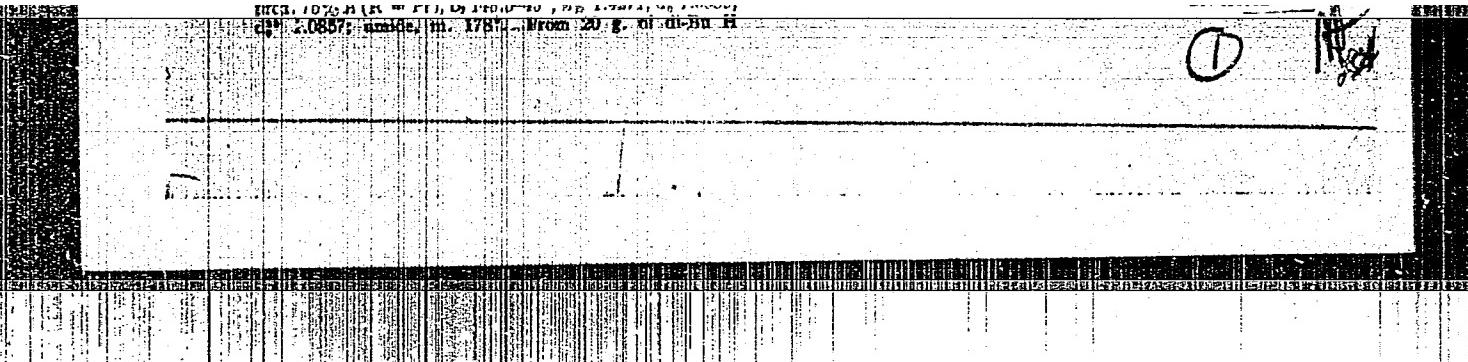
KAMAY, Gilm

Some esters of phosphogluconic and phosphonoacetic acids, and their amide derivatives. (Gilm Kamay and E. I. Shukurova. Tzadly Keem. Khim. i Tekhn. (Chem. and Technol.) 1955, No. 17, 21-33; Rijens. Zuur. Klim. 1954, No. 44607.—A number of Et diisopropylphosphonoformates,  $(RO)_2PO(O-CO_2Et)$  (A), and Et diisopropylphosphonacetates,  $(RO)_2PO(O-CH_2CO_2Et)$  (B) were obtained by the action of  $Et_2OCl$  (I)

phosphite (VI), 2.4 g. Na, and 11.23 g. I was obtained 41.5% A ( $R = Bu$ ), b, 161-2°,  $n_D^{20}$  1.4303,  $d_4^{\circ}$  1.0599, d<sub>4</sub><sup>20</sup> 1.0408; amide, m. 192°. From 20 g di-isopropyl phosphite (VII), 2.6 g Na, and 12.3 g. I was obtained 48% A ( $R = iso-Ar$ ),  $n_D^{20}$  1.4328,  $d_4^{\circ}$  1.0312, d<sub>4</sub><sup>20</sup> 1.0170; amide, m. 193.5°. III (20 g.), 4.2 g. Na, and 22.3 g. II gave 45% B ( $R = Me$ ), b, 134.5°,  $n_D^{20}$  1.4302,  $d_4^{\circ}$  1.2558, d<sub>4</sub><sup>20</sup> 1.1878.

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CIA-RDP86-00513R000620220014-4



APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000620220014-4"

145 1.4535,  $\nu_3$  28.0) 860.0; ( $C_6H_{10}O_2$ ) $_4$  $I$  (b,  $\delta$  211-13°, d $^2$  0.9750, n $^D$  1.4569,  $\nu_4$  29.1) 1101.1; ( $C_6H_{10}O_2$ ) $_4$  $I$  (b,  $\delta$  71°, d $^2$  1.0037, n $^D$  1.4280,  $\nu_4$  22.6) 862.1; ( $C_6H_{10}O_2$ ) $_4$  $I$  (b,  $\delta$  115.5-17°, d $^2$  1.0488, n $^D$  1.4300,  $\nu_4$  24.8) 820.2; ( $M_2O$ ) $_4$  $I$  (b,  $\delta$  4.0 (b,  $\delta$  07-9°, d $^2$  1.5572, n $^D$  1.4397,  $\nu_2$  38.3) 294.1; ( $E_2O_2$ ) $_4$  $I$  (b,  $\delta$  118-20°, d $^2$  1.8023, n $^D$  1.4343,  $\nu_2$  30.7) 309.8; ( $PrO_2$ ) $_4$  $I$  (b,  $\delta$  144-0°, d $^2$  1.1915, n $^D$  1.4391,  $\nu_2$  22.8) 692.3; ( $P_2O_5$ ) $_4$  $I$  (b,  $\delta$  169-71°, d $^2$  1.1257, n $^D$  1.4421,  $\nu_2$  25.4) 630.2; ( $C_6H_{10}O_2$ ) $_4$  $I$  (b,  $\delta$  169-91°, d $^2$  1.0498, n $^D$  1.4498,  $\nu_2$  25.4) 867.4. The group vanishes.

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OL A's are rather closely related in these controls

G. M. Kosolapoff

gmu

MX

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KAMAY,

Data of ethylenglycol reaction and. Ch. in Katal.  
kira Z. L. Khismanova (A. B. Arzhanov Chem. Inst., Kazan).  
Zhur. Obshch. Khim. 23, 1922-30 (1953).—Addn. of 100 g.  
AsCl<sub>3</sub> with cooling to 37.5°; (CH<sub>3</sub>OH)<sub>2</sub> in 97.2 g. pyridine  
and 400 ml. dry H<sub>2</sub>O, followed by standing overnight at  
100° temp.; and 1 hr. at reflux gave on distn. of the filtrate

some 01 g. O<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>O<sub>2</sub>AsCl (I), bp 71-2°, m. 44-5°,  
along with higher-boiling products, which included 10 g.  
(CH<sub>3</sub>O)<sub>2</sub>AsOCH<sub>2</sub>CH<sub>2</sub>OAs(CH<sub>3</sub>)<sub>2</sub> (II), b.p. 100-7°, d<sub>4</sub><sup>20</sup> 1.8051,  
*n*<sub>D</sub><sup>20</sup> 1.6428. I is instantly hydrolyzed by H<sub>2</sub>O yielding  
As<sub>2</sub>O<sub>3</sub>. Addn. of I to (CH<sub>3</sub>OH)<sub>2</sub> in pyridine and Et<sub>2</sub>O, as  
above, gave an unisolated yield of II. Heating 20 g. As<sub>2</sub>O<sub>3</sub>  
with 97.4 g. (CH<sub>3</sub>OH)<sub>2</sub> 30 min. at 140-50°, followed by  
continued heating under water-pump vacuum for removal  
of H<sub>2</sub>O, gave 92.5% II, bp 100-1°. Addn. of 6 g. AsCl<sub>3</sub> to  
15 g. II, followed by 0.6 hr. heating to unisolated temp.,  
gave largely I, b.p. 60-7°. Reboiling 2.5 g. II with 10 ml.  
D<sub>2</sub>O gave As<sub>2</sub>O<sub>3</sub>, 2.0 ml. g. II in CCl<sub>4</sub> was added with cool-  
ing 28 g. Br; the resulting rmp. of (CH<sub>3</sub>O)<sub>2</sub>As(OH)(OCH<sub>3</sub>),  
m. 137° (England, C.A. 43, 595), was sept., and the filtrate  
yielded, yielding 32.2 g. greenish lubricatory liquid, identi-  
fied as (CH<sub>3</sub>OAs)<sub>2</sub> bp 80°, d<sub>4</sub><sup>20</sup> 2.3079, d<sub>2</sub><sup>20</sup> 2.5668, *n*<sub>D</sub><sup>20</sup>  
1.6508. Thus, the previously proposed structure of the  
substance, m. 127° (C.A. 45, 101892) is in error; probably  
the initially formed [(CH<sub>3</sub>O)<sub>2</sub>AsOCH<sub>2</sub>CH<sub>2</sub>OAs](OCH<sub>3</sub>)<sub>2</sub>  
is hydrolyzed in handling to the acidic product given above.  
Addn. of 20 g. I to 3.5 g. MeOH in 0.2 g. pyridine and 250  
ml. Et<sub>2</sub>O with cooling, followed by 1 hr. reflux, gave 8.6 g.

O<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>O<sub>2</sub>AsOMe, bp 50-1°, d<sub>4</sub><sup>20</sup> 1.6453, d<sub>2</sub><sup>20</sup> 1.0310,  
*n*<sub>D</sub><sup>20</sup> 1.4035. Similarly were obtained the following esters  
(R shown followed by d<sub>3</sub>, d<sub>4</sub><sup>20</sup> and *n*<sub>D</sub><sup>20</sup>): Et, bp 61-2°,  
0.5031, 1.4784, 1.4788; Pr, bp 74-5°, 1.4188, 1.3923,  
1.4702; Bu, bp 93°, 1.4024, 1.3704, 1.4785; n-C<sub>4</sub>H<sub>9</sub>, bp  
120-1°, 1.3043, 1.3813, 1.4742; n-C<sub>5</sub>H<sub>11</sub>, bp 130-1°,  
1.2971, 1.3405, 1.4736; n-C<sub>6</sub>H<sub>13</sub>, bp 110°, 1.2449, 1.2950,  
1.4737; n-C<sub>7</sub>H<sub>15</sub>, bp 117-18°, 1.2240, 1.2041, 1.4748; cy-  
clohexyl, bp 118°, 1.4270, 1.4044, 1.5070 (from cyclo-  
hexanol); Ph, bp 143-4°, 1.5087, 1.5440, 1.5710. All  
these are readily hydrolyzed by H<sub>2</sub>O yielding As<sub>2</sub>O<sub>3</sub>. Heat-

Full translation-

DRB-T123R

(over)

Kamai, G. (2)

ing  $\text{O}(\text{CH}_3)_2\text{CH}_2\text{OAsOMe}$  with  $\text{MeI}$  0 hrs. at reflux resulted in no reaction. Similarly  $\text{II}$  failed to react with  $\text{MeI}$ ,  $\text{S}$ ,

or  $\text{Cu}_2\text{Br}_2$ . Addn. of 4.4 g.  $\text{Br}$  to 5 g.  $\text{O}(\text{CH}_3)_2\text{CH}_2\text{OAsOEt}$  in  $\text{CCl}_4$  gave an unstated yield of  $\text{C}_6\text{H}_5\text{OAsBr}_2$ ,  $b_4$  72-3°,  $d_4^{20}$  2.3152,  $d_4^{\text{25}}$  2.1707,  $n_4^{\text{D25}}$  1.5880. When 10.3 g.  $\text{I}$  in  $\text{Et}_2\text{O}$  was slowly added to cooled 15 g.  $(\text{BuO})_2\text{P}$  in  $\text{Et}_2\text{O}$  a vigorous reaction took place with deposition of red  $\text{P}$ . The filtrate gave some  $\text{BuOH}$  and a fraction,  $b_4$  140°,  $d_4^{20}$  1.1185,  $n_4^{\text{D25}}$  1.4333, which contained  $\text{P}$  and  $\text{As}$  but decompd. rapidly to a black solid; no analyses were made, presumably the substance was crude  $(\text{CH}_3\text{O})_2\text{AsI}(\text{O})(\text{ORu})_2$ . To a soln. of  $(\text{BuO})_2\text{PClNa}$  (from 24.5 g.  $(\text{RO})_2\text{POH}$ ) in  $\text{Et}_2\text{O}$  was added 30 g.  $\text{I}$  with cooling; the mixt. acquired a red color and deposited  $\text{NaCl}$  (9.9 g.); on distn. the filtrate decompd. and no individual substances were isolated. G. M. Kosolapoff

(3)

2/2

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Preparation and distribution of items destined  
for the public media. (TV, radio and A.V.)

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KAMAL, G. M.

(3)

The first representatives of cacodyliophosphonic esters,  
Gill'm Kamal and E. M. Sh. Bastajov (S. N. Kirov Chem.-  
Technol. Inst., Kuzan), *Doklady Akad. Nauk S.S.R.* 89,  
693-5 (1953).—Mixing Me<sub>2</sub>AsBr at room temp. with (RO)<sub>2</sub>P  
and heating 2 hrs. until the evolution of RBr was complete,  
gave the following cacodyliophosphonates, Me<sub>2</sub>AsP(O)(OR)<sub>2</sub>  
(R, % yield, b.p./mm., d<sub>25</sub><sup>20</sup>, and n<sub>D</sub><sup>20</sup> given): *Me*, 60.5,  
78.5°/1, 1.4011, —; *Et*, 74.3, 83°/1, 1.3036, 1.2032; *Pr*,  
64.0, 101.5°/1, 1.2343, 1.2242; *Me<sub>2</sub>CH*, 64.4, 82-3°/1,  
1.2112, 1.2015; *Bu*, 54.1, 122-3°/1, 1.1933, —. These  
are colorless odoriferous liquids, which are distillable only  
in a high vacuum in an inert atm. The As-P link is de-  
stroyed rapidly by halogen acids, alkalies, and atm. O.  
Oxidation of the di-Et ester with pure O<sub>2</sub> is energetic and  
terminates explosively. Oxidation in air yields (Me<sub>2</sub>As)<sub>2</sub>O  
and probably [(RO)<sub>2</sub>P(O)]<sub>2</sub>O. The di-Me ester is the most  
readily oxidized of this series. The reaction of Et<sub>2</sub>AsCl  
with (RO)<sub>2</sub>P requires heating and yields rather small amt.  
of the expected phosphonates, Et<sub>2</sub>AsP(O)(OR)<sub>2</sub> (R, %  
yield, b.p./mm., d<sub>25</sub><sup>20</sup>, d<sub>40</sub><sup>20</sup>, and n<sub>D</sub><sup>20</sup> given): *Et*, 29.8, 98.5-  
9.5°/1, 1.3205, —, —; *Et*, 32.2, 105.5-6.5°/1, 1.2376,  
1.2129, 1.4578; *Pr*, 36.3, 124-5°/1, 1.1817, 1.1675, 1.4901;  
*Me<sub>2</sub>CH*, 30.2, 106-7°/1, 1.1678, 1.1529, 1.4782; *Bu*, 10.9,  
144-5°/1, 1.0522, —, —. These esters resemble the  
Me<sub>2</sub>As derivs. but are less readily oxidized in air. At-  
tempted hydrolysis with 10% HCl gave (Et<sub>2</sub>As)<sub>2</sub>O, as a  
result of hydrolysis of the As-P link, and apparently H<sub>3</sub>PO<sub>4</sub>.  
G. M. Korolapoff

1. KAMAY, Gil'mi; KHISAMOVA, Z. L.; CHADAYEVA, N. A.
2. USSR (600)
4. Arsenous Acid
7. Methods of producing alkyl and glucol ethers of arsenous and arylarsenous acids.  
Dokl. AN SSSR 89, No. 6, 1953.

Evaluation  
B-76936, 19 Jul 54

9. Monthly List of Russian Accessions, Library of Congress, April 1953. Unclassified.

KAMAY, Gil'm; KHISMATULLINA, L.; ARBUZOV, A.Ye., akademik.

Separation of asymmetric tetracovalent phosphonium compounds into optically active components. Dokl.AN SSSR 92 no.1:69-71 S '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Arbusov). 2. Khimicheskiy institut im. A.Ye. Arbusova Kazanskogo filiala Akademii nauk SSSR (for Kamay and Khismatullina). (Phosphonium compounds)

Gil'm Kamay

USER/Chemistry

Card 1/1 Pub. 151 - 23/36

Authors : Gil'm Kamay, and Kuz'min, K. I.

Title : The parachors of certain esters of ethylene glycol arsenous acid

Periodical : Zhur. ob. khim. 24/1, 128-130, Jan 1954

Abstract : The parachors of five esters of ethylene glycol arsenous acid were determined experimentally. The results are tabulated. Prior to the determination of the surface tension, density and index of refraction all substances were subjected to thorough distillation in vacuo. The surface tension was determined by the method of maximum pressure of the bubbles. The physical constants of the esters are described and the problem concerning the structure of such esters as well as esters of other cyclic compounds with long side-chain is briefly discussed. Seven references: 5-USA and 2-USSR (1938-1950). Tables.

Institution: The S. M. Kirov Chemical-Technological Institute, Kazan

Submitted : July 9, 1953

	KAMAY, GIL'M
	USSR/Chemistry
Card 1/1	
Authors	: Kamay, Gil'm; and Khisomava, Z. L.
Title	: Acid chlorides and mixed esters of tetramethylethyleneglycolarsenous and pyrocatechinarsenous acids
Periodical	: Zhur. Ob. Khim. 24, Ed. 5, 816 - 820, May 1954
Abstract	: First obtained and investigated were acid chlorides of tetramethyl-ethyleneglycolarsenous and pyrocatechinarsenous acids. The acid chlorides obtained are crystalline substances soluble in water and some organic solvents. The reaction of these acid chlorides with various alcohols in a benzene medium in the presence of anhydrous pyridine results in the formation of mixed esters of tetramethylene-glycolarsenous and pyrocatechiniarsenous acids the properties of which are described. Two USSR references. Table.
Institution	: Acad. of Scs. USSR, Kazan Branch, The A. E. Arbuzov Chemical Institute
Submitted	: December 26, 1953